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**Mr. John Miller**

BY the retirement tomorrow of Mr. John Miller from the position of Engineer, North Eastern Area, L.N.E.R., there passes from the railway world one of its outstanding characters. Mr. Miller shared with the late Sir Henry Thornton the distinction of having been selected and brought over from the other side of the Atlantic to bring a fresh mind and wider experience than usual to bear upon British railway problems. It was only natural that such an invasion should at first have been regarded with some suspicion, a suspicion quickly and completely dispelled by results. Not only was Mr. Miller's experience unusually wide, but his work was so clearly stamped with his own personality that it forced itself even upon the notice of the layman. The observant passenger becomes aware of something unusual when travelling within that widespread North Eastern Area over which Mr. Miller has presided for the past dozen years. The neatness of the line, with its little lawns; flower beds, shrubberies, clean concrete lineside accessories, and all the hallmarks of the care bestowed upon it, are the reflections of Mr. Miller's orderly administration. His principle has not been merely a place for everything and everything in its place, but always first things first. Attention to method, judgment that orders priority correctly—these, backed by learning and the wisdom that grows from long and sympathetic contact with realities, have produced in Mr. Miller something that makes his going a very real loss to those

he served, whether they were his employers or his employees. The former showed their appreciation of his judgment by respecting his sense of responsibility; the latter by an attention to their work that gave him of their best. As they served him, so he responded with his sympathy and encouragement.

\* \* \* \*

**The G.W.R. Meeting**

There was a cheerful tone about the annual meeting of the Great Western Railway Company last Wednesday, tempered only by the position in South Wales. Even on that subject the Chairman had hopes of Government assistance in various directions, as for instance towards forming a cartel with other coal-exporting countries, and in support of the plans for the revival of industry and for the production of oil from coal. There was also the prospect of help from Lord Nuffield's fund. In addition Sir Robert Horne saw chances of recovering much of the South Wales coal export trade with Italy, which had in 1936 declined by 1,559,000 tons. His hope for 1937 was that after allowing for the expected increases in wages and salaries and in the cost of coal and other materials net earnings would not fall below those of 1936. The payment of the ordinary dividend for the past year entirely out of earnings was made possible not only by the reduction in the amounts contributed to local rates and to the freight rebates funds, but also by the remarkable economies in operation. Irrespective of the saving in rate payments the additional expenditure absorbed only 38.5 per cent. of the increased receipts, a most significant figure. There were record economies in the use of rolling stock, in the cost of handling traffic at goods stations, in the cost of cartage per ton, and in the amount of shunting performed per 100 goods train miles. Loss of traffic in certain classes owing to the withdrawal of rebates has been guarded against by agreed concessions in rates.

\* \* \* \*

**The Week's Traffics**

Although the traffic increases for the period under review are for the most part smaller than in the week before (with the noteworthy exception of the goods traffic results on the L.M.S.R.), the passenger figures compare particularly favourably with those in the corresponding week (the eighth) of 1936. There is a net increase under this head of £36,000, against last year's advance of £5,000. In the aggregate, the passenger increase is £163,000. Compared with last week, the L.N.E.R. has reduced its deficit on total receipts up to this time last year by a further £14,000, and the Southern, which in the previous returns showed its first aggregate improvement this year, has added another £8,000 to its lead over 1936.

|             | 7th Week   |            |           |          | Year to date |        |
|-------------|------------|------------|-----------|----------|--------------|--------|
|             | Pass., &c. | Goods, &c. | Coal, &c. | Total    | Inc. or Dec. | %      |
| L.M.S.R. .. | + 15,000   | + 25,000   | + 9,000   | + 49,000 | + 125,000    | + 1.60 |
| L.N.E.R. .. | + 3,000    | + 9,000    | + 2,000   | + 14,000 | - 24,000     | - 0.41 |
| G.W.R. ..   | + 5,000    | + 9,000    | + 6,000   | + 20,000 | + 51,000     | + 1.70 |
| S.R. ..     | + 13,000   | - 1,500    | - 3,500   | + 8,000  | + 20,000     | + 0.85 |

London Transport receipts are up by £27,300 on the week, and by £551,000 on the aggregate for the year to date.

\* \* \* \*

**L.N.E.R. Dividends**

Full dividends for the year 1936 were confidently expected on the £48,222,629 of L.N.E.R. 4 per cent. first preference stock and on the £4,014,400 of 5 per cent. redeemable preference stock which ranks *pari passu* with it. These expectations were pleasantly exceeded by the announcement last Friday of  $\frac{1}{2}$  per cent. on the £66,142,180 of 4 per cent. second preference stock, about any

distribution on which there had been considerable doubt. For 1935 and 1934 the first preference and the 5 per cent. preference had received dividends of  $3\frac{1}{4}$  per cent. and  $4\frac{1}{2}$  per cent. respectively, whereas the second preference had received nothing since 1931, when 1 per cent. was distributed. The preference payments made for 1935 required £1,730,322, and those for 1936 will absorb an additional amount of £730,014. In the 1935 accounts no credit was taken for possibilities of substantial reductions in the payments for local rates and to the railway rebates fund, and the amount so paid was entered as £1,340,255. Last Friday's announcement, however, made it clear that for 1936 the company is taking credit for £755,000 in respect of the reduction in rating charges, and that the amount to be carried forward is to be increased from £40,183 to £66,425. The published railway traffic receipts for the year 1936 showed an increase of £1,327,000, but it is evident that the greater part of this gain has been absorbed by working expenses. Larger outlays have been made on maintenance, and the higher price of materials and the additional traffic as well as the partial restoration of the reductions made in salaries and wages have had their effect on costs.

\* \* \*

### Overseas Railway Traffics

In the 33rd week of the current financial year the traffics of Argentine railways were affected by the fact that the Carnival holidays occurred in it and the comparison was with an ordinary week in the previous year, but the four larger systems continue to show substantial increases. During the past fortnight the Buenos Ayres Great Southern has added £118,541 to its previous increase, and the aggregate receipts are now £62,665 above those for the corresponding period of the year 1934-35. With its increase of £84,076 in the past two weeks the Central Argentine now has traffics which are £1,038,153 higher than those recorded for the first 34 weeks of 1934-35.

|                                | No. of<br>Week | Weekly<br>Traffics | Inc. or<br>Decrease | Aggregate<br>Traffic | Inc. or<br>Decrease |
|--------------------------------|----------------|--------------------|---------------------|----------------------|---------------------|
|                                |                | £                  | £                   | £                    | £                   |
| Buenos Ayres & Pacific ..      | 34th           | 122,395            | + 20,457            | 2,911,891            | + 216,960           |
| Buenos Ayres Great Southern .. | 34th           | 228,722            | + 57,377            | 4,751,321            | + 407,360           |
| Buenos Ayres Western ..        | 34th           | 56,266             | + 3,124             | 1,605,785            | + 128,639           |
| Central Argentine ..           | 34th           | 179,215            | + 44,074            | 5,049,075            | + 918,439           |
| Canadian Pacific ..            | 7th            | 457,400            | + 20,600            | 2,977,600            | + 239,800           |
| Bombay, Baroda & Central India | 44th           | 306,675            | + 38,700            | 7,509,975            | + 472,950           |

The Brazilian free market rate of exchange is rather higher at 3d., but the receipts to date of the Great Western and of the San Paulo both in currency and sterling are lower. The Leopoldina is better on both counts.

\* \* \*

### Southern Railway Meeting

Three diverse aspects of electrification were referred to by Mr. R. Holland-Martin, Chairman of the Southern Railway, in his speech yesterday at the annual general meeting. First was that which the experience of recent years has led us to expect, namely, a new high record of traffic by electric train. The number of passengers thus carried increased over the 1935 record by more than  $8\frac{1}{2}$  millions, with a rise in receipts of £245,000. Compared with 1932 the growth in the number of passengers was 35 million, or £1,054,000 in receipts—nearly 17 per cent. The next reference was to the price paid for current purchased outside, which had advanced during the year by 0.43d. a unit, compared with an increase of only 0.13d. in the cost of current generated by the company itself. Mr. Holland-Martin pertinently reminded his audience that when the company was contemplating its large extensions of electrification some 17 years ago the Government refused permission to build any new power station on the ground that it would be impossible to generate current so cheaply as it could be bought. To the agitation that has developed lately against the extension

of third rail electrification, based on its alleged danger to life and limb, Mr. Holland-Martin, in his third reference to electrification, gave a practical answer that will not be easy to dispose of. In any case, when the total of 14 persons who lost their lives in 1936 by contact with the live rails in this country is compared with the casualties on the roads, the matter can be regarded in its proper proportion. The meeting was most appreciative of the Chairman's able speech, and duly gratified by the progress of the past year.

\* \* \*

### Northern Counties Committee (L.M.S.R.)

Results for the year 1936 are notable as showing for the first time since 1929 a return on capital expenditure. In the railway gross receipts of £395,887 there was an improvement of £31,687, and the loss on working was reduced from £35,010 to £7,005. The profit on the hotels department rose from £1,392 to £3,081. Road goods and passenger services, which earned a profit of £11,151 in 1935, were taken over by the Northern Ireland Road Transport Board in October, 1935, and in the miscellaneous receipts for 1936 there appears a new item of £9,131 for interest on the stocks of that board received as consideration for the transfer.

|                                      | 1936      | 1935       | 1934       |
|--------------------------------------|-----------|------------|------------|
|                                      | £         | £          | £          |
| Capital expenditure ..               | 3,747,214 | 3,730,730  | 3,943,511  |
| Gross receipts from businesses ..    | 461,441   | 524,863    | 530,672    |
| Revenue expenditure on ditto ..      | 465,365   | 547,330    | 574,930    |
| Net receipts of ditto ..             | Dr. 3,924 | Dr. 22,467 | Dr. 44,858 |
| Miscellaneous receipts, net          | 15,048    | 7,228      | 7,774      |
| Total net income ..                  | 11,124    | Dr. 15,239 | Dr. 37,084 |
| Interest, rentals, etc. ..           | 1,242     | 1,267      | 1,341      |
| Available for interest on capital .. | 9,882     | —          | —          |

Total receipts from railway passengers were £165,673, an increase of £19,319, towards which increase first class contributed £770, or 13 per cent., and third class £18,723, or 14.16 per cent. Parcels, mails, &c., brought in £2,604 less, but goods train receipts were £14,353 higher, at £163,897.

\* \* \*

### Londonderry & Lough Swilly Railway

This company now finds it more economical to operate regular road services for passengers, goods, and livestock than rail services and its gross receipts from road transport in 1936 amounted to £62,346, compared with railway traffic receipts of £21,616. The railway route miles operated in 1936 were 80 $\frac{3}{4}$  miles, a reduction of 18 $\frac{1}{4}$  miles owing to the closure of the Buncrana—Carndonagh section in December, 1935. A service of motor boats on Lough Swilly is also worked. The company began to acquire buses for itself in 1929, and its road services are now operated by Transport Undertakings (Ireland) Limited, the directors of which include all the Londonderry & Lough Swilly Board. These road undertakings are specially excluded from the operation of the Northern Ireland Road Transport Act, 1935.

|   | 1936   | 1935   | 1934      |
|---|--------|--------|-----------|
|   | £      | £      | £         |
| Receipts of railway, road transport, &c. .. | 85,278 | 71,075 | 64,238    |
| Expenditure ..                              | 83,910 | 71,077 | 65,426    |
| Net receipts ..                             | 1,368  | Dr. 2  | Dr. 1,188 |
| Miscellaneous receipts (net) ..             | 3,882  | 2,115  | 2,099     |
| Total net income ..                         | 5,250  | 2,113  | 911       |

Miscellaneous receipts in 1936 included grants-in-aid from the Governments of Northern Ireland and of the Irish Free State of £1,667 and £1,717, respectively, as compared with £1,637 from Northern Ireland in 1935. The final result of the year's operations in 1936 was a debit balance of £1,078.

### A Famous Railway-owned Clyde Steamer

One of the two steamers now being built at the Fairfield yard for service on the Firth of Clyde is to replace the famous *Atalanta*, which was built by John Brown & Co. in 1906 for the Glasgow & South Western Railway; incidentally she was constructed alongside the *Lusitania*, and her triple-screw turbine installation was generally regarded as a "trial horse" for the Atlantic record breaker. The *Atalanta*, which was only a small ship of 480 tons gross, with a shaft horse power of 1,700 and a speed of 17 knots, had excellent passenger accommodation. She was launched practically ready for service in April, 1906, and was employed on different routes where the demand occurred, but generally running down to the Kyles of Bute. In spite of her small size this vessel was commissioned as a transport for the Expeditionary Force early in 1915, renamed *Atalanta II* to avoid confusion, and was later converted to a fast minesweeper to work ahead of the fleet. Upon railway grouping in 1923, she was transferred to the L.M.S.R. and continued a popular career as a passenger carrier.

\* \* \* \*

### Road Wages Regulation

The last public session—on February 18—of the Government Committee set up to consider the question of the regulation of wages and conditions of employment in the road transport industry (goods), was devoted to receiving supplementary evidence from the National Joint Conciliation Board. The committee has sat at intervals since July, 1936, and during many sittings the problem of the "C" licence holder has attracted much attention, while strong opposition has been directed against the idea that wages and conditions should be regulated by Government control. Last week, with the intention of overcoming some of these objections, the representatives of the National Joint Conciliation Board put forward certain proposals, which are briefly recorded on page 397 of this issue. A mass of evidence on all aspects of the subject has been collected, and it is not too much to say that the report and recommendations of the committee will be awaited with keen interest by road transport operators throughout the country. We appreciate that the task of the committee is exceedingly difficult, but it is generally recognised that some regulation of wages is essential, for as was stated on behalf of the railway companies in November last, "it is manifestly to the detriment of the railway companies, as road operators, and to the detriment of their subsidiary road undertakings, and indeed of all road transport undertakings which conform to remuneration and conditions of service properly determined, that they should have to face the competition of undertakings which in no way conform to the remuneration and conditions determined by appropriate authorities."

\* \* \* \*

### Train Numbering

It is curious that in the country in which railways had their birth so little has been done to simplify the references to individual trains. For example, the passenger about to reserve a seat still writes or telephones that he wants it in, say, "the 5.50 p.m. train from King's Cross to Bradford," or whatever train it may be. Apart from a limited use of identification numbers for telegraphing purposes, even the railways themselves, in their internal correspondence, refer to trains largely by their times, starting-points, and destinations. On Continental and American railways, however, trains are almost invariably identified, both officially and publicly, by their numbers. Although not all Continental railways are equally sys-

tematic in their numbering methods, some, like the French *État*, have their numbers so admirably arranged that from the train number the route, direction, and description of train are all immediately apparent. Other French lines, like the Nord, not merely print the train numbers in their timetables and timesheets, but the engines carry the numbers of their trains prominently on their buffer-beams, with the additional refinement of illumination at night, and these numbers are of considerable use to the public as well as to the operating staffs, especially at busy junctions. The only English railway whose engines carry train identification numbers is the Southern, but for official use only, the significance of these numbers being unknown to the public.

\* \* \* \*

### The Externals of the Locomotive

Although the simplified exterior of locomotives in America and certain other countries is largely due to the cult of streamlining, there were, prior to this, some indications of a tendency to improve appearance by removing from sight certain of the more prominent features of equipment. This tendency had become somewhat pronounced in the United States, following the visits of the G.W.R. "King" and the L.M.S.R. "Royal Scot" engines, which created a favourable impression among American railway engineers both as regards smoothness of exterior and general excellence of finish. On the Continent also there would appear to be a growing opinion in favour of simplifying the outward appearance of the locomotive, not by sacrificing any of the equipment, but by finding positions for some of the components where they cannot be seen, instead of placing as much as possible on the outside and thus tending to convey that a modern locomotive is a very complicated and intricate machine. There is, on the other hand, something to be said for placing equipment details, such as may require attention fairly frequently, in positions where they are readily accessible, thus removing the criticism that although an actual repair job itself takes only an hour or so to complete, many more hours are absorbed in removing and replacing other parts, without which the vital repair cannot be effected. Something between the two extremes is now being adopted with advantage on many railways abroad.

\* \* \* \*

### Railway Scenes as Poster Subjects

Acceleration, and its portent in the shape of high-speed test runs, has quickened public interest in railway equipment. The present is therefore an opportune time to introduce railway scenes into pictorial advertising, as is well demonstrated by some posters we have received from the L.M.S.R. All admirers of speed—who seem to represent a formidable proportion of the public in these days—will be attracted by Bryan de Grineau's dashing study of an L.M.S.R. express, in which the splash and flurry of picking up water at speed is cleverly used to enhance the idea of rapid motion. "Ready for the Road," a scene at Camden shed by Norman Wilkinson, has the unfailing fascination of "a peep behind the scenes," and, bowing to the modern public demand for intimate detail, is accompanied by a brief account of the motive power based on the depot. In his "Willesden No. 7 Box," the same artist evokes memories of that comfortable delegation of responsibility for his safe transport with which the traveller composes himself for a night on the train. Both artists achieve, by the discreet insertion of technical detail, an authentic railway atmosphere, and we think the public will in consequence find their work more interesting than those bold presentations of impressionistic outline which sometimes do duty for trains in posters.



## London & North Eastern Railway

UNDER practically every head, with the exception of coal for export, the revenues earned by the company during 1936 have shown moderate increases. On the other hand, large increases in expenditure, mainly in the renewal of rolling stock, prevented the net revenue showing a correspondingly satisfactory improvement. The gross railway receipts at £46,883,485 are £1,737,836 in excess of those for 1935, but the net revenue at £9,141,395 is up only £770,022. Passenger train receipts total £16,970,552 (an increase of £504,285); merchandise and livestock £17,225,923 (+ £724,949); and coal £12,305,219 (+ £487,891). These totals are, of course, substantially below the figures for 1929, the respective decreases on this basis of comparison being £2,127,000, £4,627,000, and £1,827,000. Passenger train receipts in 1936 account for 36.2 per cent. of the total receipts, against 36.47 in 1935. The tonnage of freight traffic carried in 1936 was 6,263,565 tons, or 5.07 per cent. greater than in 1935, while the number of passenger journeys (excluding season tickets) increased by 5,495,998 or 2.73 per cent. Freight engine mileage increased by 3,652,436 or 4.24 per cent. and the passenger engine mileage by 1,727,449 or 2.20 per cent. The following table compares results for the past three years:—

|   | 1936<br>£   | 1935<br>£   | 1934<br>£   |
|---|-------------|-------------|-------------|
| Total expenditure on capital account ..                     | 351,736,607 | 351,554,147 | 351,333,741 |
| Gross receipts from businesses carried on by the company .. | 53,943,907  | 51,818,934  | 51,376,256  |
| Revenue expenditure on ditto ..                             | 45,146,124  | 43,945,267  | 43,521,169  |
| Net receipts of ditto ..                                    | 8,797,783   | 7,873,667   | 7,855,087   |
| "J" Joint Lines—company's proportion of net revenue ..      | 315,956     | 284,100     | 258,199     |
| Miscellaneous receipts (net) ..                             | 992,404     | 1,162,409   | 1,177,889   |
| Miscellaneous charges ..                                    | 964,748     | 948,803     | 943,029     |
| Net revenue ..  | 9,141,395   | 8,371,373   | 8,348,146   |
| Interest on loans and debenture stocks, &c. ..              | 4,274,263   | 4,263,349   | 4,253,298   |
| Dividends on guaranteed and preference stocks ..            | 4,890,890   | 4,160,875   | 4,158,458   |
| Balance after payment of preference dividends ..            | Dr. 23,758  | Dr. 52,850  | Dr. 63,610  |
| Deficit ..  | 23,758      | 52,850      | 63,610      |
| Appropriation from reserve ..                               | 50,000      | 50,000      | 50,000      |
| Balance brought forward from previous year ..               | 40,182      | 43,034      | 56,643      |
| Balance carried forward to subsequent year ..               | 66,425      | 40,182      | 43,034      |

As already mentioned, the net revenue for the year was £9,141,395; together with the balance of £40,182 brought forward from the previous year, and an appropriation of £50,000 from general reserve, a sum of £9,231,577 is available. After providing for all fixed charges and paying the dividends to which we refer in an editorial note on page 361, a balance of £66,425 is left to be carried forward. Net expenditure on capital account for the year amounted to £182,461 only, but capital expenditure for the current year is estimated at £4,901,000, of which over £1,800,000 are for works scheduled to the London Passenger Transport (Agreement) Act, 1935, or the Railways (Agreement) Act, 1935, and £2,546,000 for additions and improvements to locomotives, carriages, and wagons. Work has been begun on a number of the improvements to be carried out under the Railways (Agreement) Act, 1935, and expenditure on these works up to December 31 last was £843,734. The preparation of plans and other preliminary work in connection with the electrification to be carried out by the company under the London Passenger Transport (Agreement) Act, 1935, is proceeding, and it is expected

that constructional work will be started in the near future. Of the schemes undertaken as a result of the remission of passenger duty granted under the Finance Act, 1929, two remain to be completed; the total amount expended under this head up to the end of last year was £1,493,102.

It is gratifying to be able to record a credit balance in the steamships account for the first time since 1931. An increase of £64,165 in receipts, coupled with a decrease of £1,027 in expenditure, converted the loss of £44,474 in 1935 into a profit of £20,718 in 1936. The company's Harwich Continental services carried 13.7 per cent. more passengers than in 1935, and 6.3 per cent. more than in 1931; the improvement was most marked in the Hook of Holland service. Cargo carryings were 183,634 tons, an increase of 17,963 tons, or 10.8 per cent., in spite of restrictions on Continental trade and the Antwerp dock strike which lasted for three weeks in June. Although traffic by the Harwich—Zeebrugge train ferry was seriously depleted through the cessation of trade with Italy during the early part of the year, a welcome improvement during the last few months resulted in the total tonnage for the year being slightly higher than in 1935. The new train ferry service inaugurated by the Southern Railway in October between Dover and Dunkerque will be in competition with the L.N.E.R. Harwich—Zeebrugge service, but, as a result of negotiations, a satisfactory agreement has been reached between the L.N.E.R. and the Southern Railway whereby the competition will be confined in extent and joint efforts will be made to develop traffic by both routes. The total amount invested in the shares of associated bus companies, at the end of 1936, was £2,353,467. The dividends and other sums received during the year amounted to £232,201, representing a return at the rate of 9.87 per cent., compared with 8.76 per cent. in the previous year. A portion of the revenue related to capital which was held for part of the year only, and the total income is equivalent to an annual return of 10.01 per cent. In addition, the net savings accruing to the company from the closing of branch lines for passenger traffic, reductions of train services made possible by the employment of bus services, and other measures of co-ordination, amounted during the year to approximately £99,000.

\* \* \* \*

## Great Southern Railways

THERE was no change of importance in the route mileage of railways worked by this company during 1936 in comparison with 1935, but further developments took place in road transport. As is already well known, the company, under the Road Transport Act of 1933 has been given a controlled monopoly of road transport in its own districts in the Irish Free State outside certain specified areas round ports, &c. Capital expenditure in 1936 included £192,947 for payments on account of acquisition of road transport undertakings, £31,669 for parcels and goods road vehicles, and £68,348 for passenger road vehicles. It has increased its stock of road motors for goods and parcels from 600 to 647, and its stock of omnibuses from 287 to 308, but the number of horse wagons and carts has been reduced from 381 to 365. The road transport gross receipts of £958,826 in 1936 showed an improvement of £128,147. Passengers and parcels brought in £538,517, an increase of £36,232, and in the goods receipts of £370,222 there was an advance of £88,416. Expenditure on road transport, however, advanced from £743,972 to £902,686, and the net receipts were £30,567 lower, at £56,140. Amongst other ancillary businesses the hotels department increased its profits from £9,369 to £14,024



and the loss on the canal was reduced from £4,346 to £4,245, but docks, harbours, and wharves gave net receipts of £1,364, compared with £2,056 in 1935. The accompanying table compares the general financial position for the past three years:—

|  | 1936       | 1935       | 1934       |
|--|------------|------------|------------|
|  | £          | £          | £          |
| Total expenditure on capital account .. .. .   | 30,863,778 | 30,515,167 | 30,162,688 |
| Gross receipts from businesses .. .            | 4,366,923  | 4,140,958  | 3,857,559  |
| Revenue expenditure on ditto .. .              | 3,894,671  | 3,653,165  | 3,457,544  |
| Net receipts of ditto .. .                     | 472,252    | 487,793    | 400,015    |
| Miscellaneous receipts .. .                    | 36,540     | 57,974     | 106,847    |
| Total net income .. .                          | 508,792    | 545,767    | 506,862    |
| Interest, rentals and other fixed charges .. . | 348,401    | 360,684    | 358,770    |
| Dividend on guaranteed preference stock .. .   | 155,454    | 194,298    | 155,415    |
| Surplus or deficit (+ or -) .. .               | +4,937     | -9,215     | -7,323     |
| Brought forward .. .                           | 29,670     | 38,885     | 46,208     |
| Carried forward .. .                           | 34,607     | 29,670     | 38,885     |

Railway gross receipts amounted in 1936 to £3,262,201, an increase of £81,496, or 2.56 per cent. In the railway expenditure of £2,857,233 there was at the same time an increase of £70,535, or 2.53 per cent., and the railway traffic operating ratio rose from 87.85 per cent. to 87.88 per cent. Railway net receipts were £404,968, an increase of £10,961. Miscellaneous receipts were £21,434 down, because of the fall in rents and general interest, and of the fact that last year they included £12,622 profit from sale of investments. Interest charges, &c., are lower because of a credit of £18,807 for surplus of income tax, offset to some extent by £6,000 interest on an issue of £400,000 of 4 per cent. redeemable (1942) debenture stock. The dividend payment on the 4 per cent. guaranteed stock includes the dividend in arrear for 1935 as well as the full dividend for the year 1936, so that now there are no arrears on this stock. A year ago arrears for the years 1933 and 1934 were paid, and the larger amount then distributed was due to the fact that the dividend for the first half of 1933 was payable on the £3,885,374 of stock as it stood before its reduction to £1,943,167 under the Railways Act, 1933. Passenger train traffics as a whole amounted to £1,294,987, an increase of £16,891. Receipts from passengers (£851,698) showed an improvement of only £5,826, entirely in the third class. First class were slightly lower, representing 7.65 per cent. of the total railway passenger receipts, as compared with 7.9 per cent. in 1935. In the goods train receipts of £1,943,283 there was an increase of £62,679, or 3.33 per cent. Capital expenditure in 1936 included £19,801 on locomotives, £5,600 on Pullman coaches, and £35,578 on bogie coaches. The stock of restaurant cars has been increased from 11 to 14.

\* \* \*

#### 4-6-4 + 4-6-4

WITH this unique wheel arrangement and having several other noteworthy features incorporated in its design, the remarkable locomotive of which an illustrated description appears on page 375 of the present issue, marks yet another advance in the planning and construction of articulated locomotives for service on narrow or, indeed, any gauge of railway laid with light sections of rail. In designing engines to meet special needs in which (1) a high tractive power is required, and (2) individual axle loads must be kept down, there is set a problem which can be solved only by the adoption of special measures, calling, even when conditions are not extreme, for the adoption of the articulated principle of construction, often-times in a highly developed form. Tractive force can be obtained in more ways than one, which are, however,

subject to the limitations of circumstance. Where conditions demand a high power output coupled with maximum flexibility of wheelbase, and ample adhesion weight co-related to light axle loadings, then, in order to avoid double-heading with its sacrifice of economy and other disadvantages, resort must be had to articulated locomotives, which provide what is required in single unit form, and without imposing undue stress on the permanent way and structures.

The Beyer-Garratt 4-6-4 + 4-6-4 locomotives recently built for the Sudan Railways worthily demonstrate what experience can achieve to meet these circumstances. The use of four 4-wheeled bogies in one engine has already been characterised as unique, for so we believe it to be, and those concerned with locomotive matters will at once realise the advantage of having groups of coupled wheels preceded by a 4-wheeled bogie under all conditions of running. This last feature in itself is not, of course, unique, for many wheel arrangements provide it, but its value is greatly enhanced where, as in this case, the engine has two independent groups of coupled wheels, the one following the other through all the intricacies that may be presented by the track layout. The other advantage, and the reason for its introduction here, is the increased capacity of coal, and particularly water, it permits. The service conditions under which these new engines will work may be gauged from the particulars of the railway itself incorporated in the article on page 375, and the design of the locomotive as a whole should be considered in conjunction with these particulars, and not merely as a new type. Much ingenuity has been expended in working out the details of the design, and, after inspection at the builder's works, we ourselves formed the opinion that although possessing extreme flexibility of wheel arrangement, the engine will prove itself to have a stability on the track equal to the acknowledged reputation of its type.

It is, perhaps, unnecessary to call attention to the boiler and its proportions, amplitude in this direction being recognised as a strong point in Beyer-Garratt design. Nevertheless the provision of 2,400 sq. ft. of heating surface, none of it more than 12 ft. 5 in. distant from the firebox, and 43.2 sq. ft. of grate area, on a 3 ft. 6 in. gauge locomotive designed to work on 50-lb. rails are features not to be disregarded. Nor is the fact that in the circumstances detailed, with a relatively moderate boiler pressure and a 12-ton maximum axle load, the tractive effort at 85 per cent. of the boiler pressure amounts to 43,520 lb. This, as is stated in the article on pages 375-379 represents a 48 per cent. increase over that of the eight-coupled engines allowed to run over the same 50-lb. track of the Sudan Railways, and an appreciable increase also over the heavier engines having the same wheel arrangement. We believe the new locomotives to be the most powerful in the world built for service on this weight of rail.

**VISIBLE WARNING OF APPROACH.**—In Germany, as in this country, motorists are forbidden to sound their horns at night, and it has been the practice for some time for drivers to give warning of their approach by flashing their headlights on and off. A device has now been perfected which converts the audible horn after dark into a visible horn, so that, as the horn button is pressed, instead of sounding, it connects with the headlights, causing them to flash four times in a second. The merit of the arrangement, which, we gather, has attained considerable popularity in Germany, is that the driver is able to make the same motion both by day and night and give the appropriate legal warning without further thought.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### The Matriarch of Train Ferries

February 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—May I correct an error made by your correspondent—Mr. Macdonald—in your issue of February 5. He says "There never was a train ferry across the Tay." I can only assume he is too young to have seen it, as I have done, and seen many hundreds of goods trucks hauled up out of the old P.S. *Leviathan* or her two sister ships. I am not prepared after all these years to say that the *Midlothian* was there, but I remember there were three on the run—though one may have come round from Granton as a relief. I believe one was called *William Muir*. The two passenger steamers were the *Auld Reekie* and the *Thane of Fife*. They "lived" at Tayport, a small harbour on the Fife side, and crossed to Broughty Ferry on the Angus shore, about 3 miles down river from Dundee. From the pier a branch line—about  $\frac{1}{2}$  a mile long—over rising grades and all reverse curves, joined the Dundee and Arbroath line at Barnhill Junction, where all trains had to reverse. It was a single line, with only one loco. in steam allowed. Prior to 1877, when the first Tay bridge was opened, all goods and passenger traffic was worked to and from Dundee East station by the Caledonian Railway. The goods ferry was then closed, but after the fall of the Tay bridge in December, 1879, the passenger traffic was re-started, only this time by the N.B.R. from Tay Bridge station through the Dock Street tunnel, though the C.R. still worked the branch. The pier was close to the old castle, and the goods steamers had a small sheltered harbour on the east side, whilst the passenger boats used the west side, or at H.W.O.S.T.—the cross end, but only if the tide suited, as there was a strong current on the ebb.

Whilst the present Tay Bridge was being built all the Fife goods traffic to the north was worked round by Perth via Caledonian Railway under the running powers. I believe the whole place was dismantled and the little harbour was acquired by the Government during the war. In case you may doubt my knowledge, may I add that I lived at Broughty Ferry for a time, as I crossed the old Tay Bridge as a student at St. Andrews (and latterly the steam ferry) and was later an engineering pupil at Dundee till 1886.

Yours faithfully,

W. H. H.

### Railway Catering

56, St. Mary's Mansions,

Paddington, W.2, February 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The editorial reference in your issue of January 1 to the "popular" and ever-widening appeal of the London & North Eastern Railway buffet cars is very opportune. During the coming summer many foreign tourists will be comparing the catering and hotel accommodation of the British railways with what is now offered abroad, and it is satisfactory to see that the Great Western Railway, on whose system a 2s. 6d. "short" lunch has long been available and whose newer buffet cars are no less attractive than those of the L.N.E.R. North Eastern Area, has already announced a further step towards "popular" catering on trains. But that "Olympian standard" which still obtains on certain restaurant cars is not exemplified only by the "no meat meal under 3s. 6d." slogan to which you allude. The passenger, for instance, who takes his tea between Liverpool and Leeds on one of the trains formed of L.N.E.R. stock has an excellent inclusive meal at 1s.—on other cars, in the same territory, he will pay an ascending price (according to his appetite) which may easily double the North-Eastern charge, and he may have the further pleasure of watching an attendant whose special duty it is to record every morsel of food he takes, over and above the exiguous

official "ration," for subsequent inclusion, as an extra, on his bill! If he lunches on a North-Eastern area station he has at 2s. a *table d'hôte* meal for which the adjacent refreshment-room of another group still rigorously demands at least 2s. 6d., and the same variation in tariff extends to the hotels. As the guest of one group, he will pay 10s. or more for an arctic bedroom, while "across the way" he is charged 7s. 6d. or 8s. for a room equipped with a "slot" electric or gas fire—a simple and inexpensive adjunct to comfort, which can be given when costly "modernisation" is impracticable. Finally, he will compare the appeal of the buffet car, with its neatly laid-up tables and its display of food and tariff, with the restaurant car offered him elsewhere—its tables at tea-time bare or covered with soiled cloth, and the staff in their shirt-sleeves taking a siesta at one end of the car—and wonder why, when some 75 tons of dining-car are being hauled over routes where the demand for elaborate *table d'hôte* meals is small, some effort is not made to attract the passenger by better "display" and a moderate tariff.

Yours faithfully,

R. E. CHARLEWOOD

### The Russian Railways

Coll-Earn, Auchterarder.

February 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The very interesting old letter you printed on p. 933 of your issue of December 4, 1936, shatters another of my life-long illusions. I was always led to believe that the 5-ft. Russian gauge arose because they wanted to prevent Prussian stock pouring on to their rails in the case of an invasion.

May I, in some fear therefore, give another Russian railway point? When the Czar wanted a line to connect the old and new capitals—as it were Edinburgh and London in our two Kingdoms and practically the same distance—he set up an Imperial Commission to advise him as to a route. It fell to fighting, one half favoured a line by Crewe and Carlisle the other felt towns would be best served via York and Berwick. The Czar sent for his advisers and listened for a long time to the dispute. Then he drew his sword and using it as a ruler drew a straight line from Moscow to St. Petersburg. (He called it "Petersburg" since Peter the Great is not in the catalogue of the Holy Orthodox Church's saints). And pronounced his ukase, "That is the railway between them."

When 36 years ago I studied the Imperial Russian Railways under H.H. Prince Chilkoff—that prince of Transport Ministers of Siberian Railway fame—there was nine feet of snow and the monotony of 400 miles dead straight and dead flat and with almost no buildings was a daymare of blindness from a strong sun off dazzling snow. Our train got through from Moscow to St. Petersburg as we had the Imperial mails and an Imperial Grand Duke on board. The one line was kept open by tens of thousands of peasants digging the snow as it fell with wooden spades. We stopped alongside of a snowed-up freight train and I heard my conductor talk across into the cab. I asked him what the driver had said. "I asked him how long he had been stuck and he said, 'Three days.' I said, 'When do you hope to move on' and he said, 'God alone knows.'"

My cousin brought a like story from India. In the Indian Mail train when it stopped he looked out and saw a very old Hindu tapping the wheels. He asked him how long he had done that work and was told nigh 50 years. "And what for do you tap the wheels?" The startling reply came, "God only knows." Perhaps the old soul thought it was a Christian piece of ritual to bring safety to the train!

I remain, faithfully yours,

NORMAN DORAN MACDONALD

### Profit-Sharing Proposals

26, Hillside Road, Hillside,  
Nr. Southport, Lancs. February 21

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The reference in THE RAILWAY GAZETTE of February 19 to profit-sharing proposals recalls a form of bonus distribution of profits (or rather, of excess earnings) that was in force on one of the principal Spanish railways long before *The Railway News* articles of 1911. The scheme was described in my book "The Railways of Spain," in 1923, in the following words:

"Profit Sharing in Spain. . . . The Madrid Caceres & Portugal Railway Company for many years past has distributed among its staff a bonus contingent on the increase in gross receipts over those of 1900. The whole of the staff participates in the distribution, from general manager downwards, but the amount varies in inverse ratio to the rate of pay. Five per cent. of the increase (if any) is allotted to the staff in a varying scale. The lowest paid employees receive the equivalent of 45 days pay and so on for the higher paid grades to 20 days pay at the other end of the scale, or less in proportion if the increase is insufficient, while any surplus is again divided up *pro rata*. In 1921, for example, although the company paid no dividend, there was a fair increase over 1900 figures, the 5 per cent. amounting to 690,682 pesetas, which was sufficient to provide a bonus on the lower paid ratings equivalent to 67 days pay on the pre-war rates. It is perhaps hardly fair to call this 'profit sharing,' as the company made no profit, but it is a highly popular method of interesting the staff generally in the prosperity of the railway."

The Madrid Caceres Company enjoyed a comparative immunity from labour troubles, but to what extent this might fairly have been attributed to the operation of the bonus scheme it would be difficult to say.

Yours faithfully,  
GEORGE L. BOAG

The British Railway Stockholders Union, Limited.  
25, Victoria Street, London, S.W.1.

February 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Your leading article fills me with despair. It brings home to me how utterly impossible it is to get people to visualise a proposal in all its possibilities. You try to take a man up a high hill to show him a vast territory and he stays at the bottom and complains about a stone!

To come to what is relevant I want an arrangement so simple that the most dull-witted porter in the service of the companies, shifting a crate into a truck, will, spitting on his hands, remark: "There goes another sixpence for me." Probably you agree with me. From what I know of THE RAILWAY GAZETTE, I feel sure you will do. But the scheme you reprint from *The Railway News* of 1911, while it is extremely interesting, is so complicated that after working on it for forty-eight hours I would not myself dare to apply it in any given set of circumstances. In short, with great respect, it is precisely the scheme that the companies could be trusted to think of for themselves.

Within a month I shall have left the railways for the time being, possibly for good and all. This letter has all the irresponsibility of the tomb. Taking full advantage of that consideration, I should like to outline what I take to be the essentials of an effective proposal:—

(a) It must be a scheme agreed by labour and stockholders as equitable to both parties.

(b) It must be so simple that the most stupid stockholder, waiting for his train, can discuss it on the platform with the dullest of porters.

(c) It must lend itself to propaganda amongst the men, who should constantly be informed, by bulletins, signed by the General Manager, how things are going. ("We have scored heavily during the past three weeks. Net revenue for this period will probably approximate to £x of which £y will be divisible amongst the staff (all grades)).

(d) It must be capable of personal application by every member of the staff ("Every man who slacks is robbing

his pals. Team work wins the cash.'). ("Do you know what your share of the profits will amount to at the end of the year?—£100 for the most accurate forecast.") ("Are the stockholders in your district pulling their weight? They can frequently influence traffic the right way. Perhaps a word from you would remind them that we are all in the same team. We want the traffic!!").

(e) It must be capable of becoming so much a part of a worker's thoughts that anything in the nature of a cessation of work will infuriate him.

(f) Any suggestion of putting representatives of the men on the boards is utterly ridiculous. The worker is entitled to good wages. Anything given him above that is a gift to which the giver alone can attach conditions. In any event a sensible scheme will be so simple that every porter will be able to say from the amount paid to the stockholders what will be the amount to be divided amongst the men. After payment of full wages and interest on debenture and guaranteed stocks, every £1 of revenue available for dividends should be divided in agreed proportions between stockholders and men. ("If my share is so and so, yours must be such and such.")

I am told that labour will not agree to anything on these lines. Has anyone attempted to find out what they will agree to? In any case, who owns the railways, who is supposed to control them? Are we always to be dominated by the least intellectual amongst us? Does anyone really suppose that without leadership and courage anything worth while can be created?

Of course the railways can do it. Look at the journals published today by the L.M.S.R. for its staff. Such efforts would have rendered the board of the old L.N.W.R. utterly speechless. Yes, but look at the traffic returns, dragged from endless difficulties by the courage and will of men who know what they want. Things can be done—that is the easiest part of it. What is difficult is to find the men who can do them.

Yours very truly,  
ASHLEY BROWN

### Railway Carriage Pictures

Southern Railway, General Manager's Office,  
Waterloo Station, S.E.1. February 22

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read with interest my friend Mr. Lambert's letter to THE RAILWAY GAZETTE of February 19 with regard to the above subject. The photographer labours under three acute disadvantages as compared with the artist.

1.—The fact that the photographer has to take the composition of his photograph as he finds it, whereas the artist can leave out an ugly building or an ugly tree, and still make a picture which is sufficiently like the place to be advertised to enable it to compete in this respect with a photograph.

2.—The lack of colour limits the possibilities of photographs to an amazing extent.

3.—The photographer has often to wait weeks or months before he can obtain what he requires, owing to bad weather conditions, whereas the artist can combine the various effects he sees in one picture.

It is for these reasons, and also owing to the influence of the films, that photography in these days is mostly concerned with close-ups and human figures, which for the most part are independent of lighting and weather effects.

To obtain a really good landscape photograph with cloud effects and lighting in the right place, it may be necessary often to wait for months. This precludes the really good landscape photo from being cheap. Therefore, while I agree with Mr. Lambert's remarks that the photographic work allows a much wider range of views, yet it was because of their expense that the experiment was made with regard to Donald Maxwell's sketches, which were so very much cheaper than photographs.

Yours faithfully,  
C. GRASEMANN  
Public Relations and Advertising Officer.



## PUBLICATIONS RECEIVED

**British Standard Glossary of Terms Used in Railway Signalling.** (British Standards Institution Specification No. 719—1936.) London: British Standards Institution, 28, Victoria Street, S.W.1. 8½ in. × 5½ in. 57 pp. Price 2s. net (post free 2s. 2d.).—Signal engineers have for some time been feeling the need of a standardised set of technical definitions, confusion being likely to arise from appliances being sometimes differently named by the various railways and manufacturers. Signalling having now become standardised as to fundamental principles and devices, this specification will be very useful, coming after that covering signalling symbols, as it will enable a certain degree of uniformity to be obtained in signalling descriptions and instructions. Glossaries of signalling terms have, of course, appeared before, especially in America, as appendices to text books, or as official publications of the Association of American Railroads, into which the work of the old Railway Signal Association was absorbed some time ago; but little has been done covering British practice. It is surprising to see how many definitions are found necessary in this subject, there being some 630 main headings in the present specification, with a number of sub-headings in certain important cases.

**The Story of a Pioneer: The Florida East Coast Railway.** St. Augustine, Florida, published by the Receivers of the Florida East Coast Railway. 8½ in. × 5½ in. 32 pp. gratis.—This is a well-produced brochure issued at the end of last year to mark the jubilee of what is known as the Flagler system, namely, the Florida East Coast Railway and associated enterprises. Mr. Henry Morrison Flagler is justly described as the pioneer of the East Coast of Florida, for he not only projected and built the railway which opened up this coast, but also established the Flagler system hotels and initiated the advertising campaign which has made a wilderness into a "millionaires' playground." Until 1883 there was no railway between Jacksonville and St. Augustine, and adventurous travellers who wanted to visit the latter place—a settlement of 1565—travelled by boat down the St. John's River to Tocoí, and there transferred to a little mule-power railway that carried them to the outskirts of their destination. This line, known as the St. John's Railway, was chartered in 1858 and completed shortly before the Civil War. Its permanent way consisted of strap iron laid on wooden rails.

Flagler, who was one of the founders of the Standard Oil Company and had become a millionaire, took up the development of the district at the end of 1885. Just over two years later, gauge unification in the Southern States was completed and enabled the first through all-Pullman vestibule train

to be run from Jersey City to Jacksonville on January 10, 1888. Two years later Flagler opened a railway bridge over the St. John's River at Jacksonville—one of the first steel bridges in the south—and the way was open for the East Coast of Florida to be developed. The railway was inaugurated to Miami on April 22, 1896. Subsequently Flagler successfully undertook the task of bridging the Florida keys to Key West and on January 22, 1912, he rode triumphantly across this well-known "oversea" railway. It will be recalled that on September 2, 1935, a storm of unprecedented intensity practically destroyed the 40 miles of line on the Florida keys, and the train service has since terminated at Florida City. Although this spectacular part of the enterprise is no more, the main undertaking of the Florida East Coast Railway remains as a lasting memorial to Flagler's work, and this jubilee booklet tells a fascinating "story of a pioneer."

**City of Birmingham Handbook, 1937.** Birmingham: City of Birmingham Information Bureau, Council House. 9½ in. × 6 in. 316 pp. Illustrated.—A new edition has reached us of this handsome illustrated handbook, the 1936 edition of which was reviewed in our issue for April 24 last year. It is again an interesting guide to the history and present activities of the city, with local transport well represented in the section on civic undertakings. There is an outline description of the proposed Elmdon airport, to replace that at Castle Bromwich at present used by the Railway Air Services routes. The present plans of the Airport Committee envisage the completion of the preliminary scheme by the spring of 1938, after which the area available and amenities for passengers will increase towards the ultimate goal of an airport fully in keeping with the importance of Birmingham.

**Easter Tours.**—The National Union of Students, 3, Endsleigh Street, London, W.C.1, has published its Easter holiday programme. Numerous opportunities for winter sports' enthusiasts are listed, and there is also a section showing walking and sailing holidays in England. A 17-day tour has been arranged in Russia, visiting Leningrad and Moscow, and scheduled outwards via Finland Line steamer to Copenhagen and Helsingfors, and sleeping car train thenceforward.

**Seeing Britain and Ireland.**—The Coronation year is an opportune moment for the appearance of this attractive illustrated guide to holidays in these islands, neatly bound in a blue cover bearing a humorous sketch of figures in the national dress of England, Wales, Scotland, and Ireland. It is the production of Dean & Dawson Limited, 7, Blandford Square, London, N.W.1, whose arrangements include rail, road,

and air travel, and coasting trips round Scotland and the Western Isles. Prices of the tours are given from the principal provincial towns, these including third class travel to and from the starting point, or the resort which is to be the centre for subsequent day excursions. Both types of holiday are well represented.

**Leicester Requires Trade Catalogues.**—The Commercial and Technical Department of the Leicester City Libraries is building up a collection of manufacturers' catalogues. Firms are therefore invited to supply a complete set of their current publications, which will be indexed in the card catalogue, both under the firm's name and the particular productions in which they specialise. Dr. E. E. Lowe, B.Sc., Ph.D., is the Director of the City of Leicester Municipal Libraries, Museum, and Art Gallery.

**Rail Tours in Europe.**—Schedules of all the grand tours of Europe organised by Thos. Cook & Son Ltd., Berkeley Street, London, W.1, with reserved rail accommodation are set out in a new illustrated folder (with maps). The areas covered are Italy, France, Central Europe, Germany (including a special tour of the Hansa towns), and Scandinavia, and departures are made in most cases at various dates between May and September. For the Italian tour, however, there will be a special departure on March 24, allowing Easter to be spent in Rome. All tours occupy fifteen or sixteen days.

**Cutting Oil.**—Cooledge water-soluble cutting oil is a product of Fletcher Miller Limited, Dukinfield, Manchester, and some interesting notes on its qualities are contained in an illustrated folder now before us. It is intended for use at the maximum surface speeds in metal-cutting operations, and will stand unusual dilution without losing its inherent properties. Illustrations in the folder show Cooledge being applied during the cutting of special mild steel, the milling of steel turbine blades, and the reconditioning of steel motor crankshafts. A mirror-like finish is produced with this coolant, and tool degradation is prevented.

**Blowers and Exhausters.**—An illustrated folder giving brief particulars of rotary blowers and vacuum pumps reaches us from the B. A. Holland Engineering Co. Ltd., 18, Victoria Street, London, S.W.1. Freedom from vibration and continuous delivery are special advantages claimed for these machines, which are of simple construction owing to the absence of valves, valve springs, and stuffing boxes. One range of blowers has capacities from 12 cu. ft. to 8,000 cu. ft. a minute, while a special series of low-pressure equipment is supplied in capacities from 250 cu. ft. to 12,000 cu. ft. a minute. Up to 95 per cent. vacuum is obtainable with the rotary vacuum pumps. Single-stage and two-stage water-cooled rotary compressors provide for pressures up to 250 lb. per sq. in.

## THE SCRAP HEAP

### WHY?

It seems strange to us that freight moving in a box car should be called a SHIPment, whereas freight moving in a ship is called a CARgo.—From the "Railway Age."

During excavations for the underground section of the new Nord-Sud railway in Brussels a shaft more than 30 ft. deep has been found leading into a gallery over 140 yd. long communicating with the Alexian Convent. A stone bearing the date 1633 was in the gallery.

Knock, knock!

Who's there?

Waterloo.

Waterloo what?

Water lo(o)ses nothing by the addition of a wee drop of Scotch.

### TROUSERS IN TRAINS

More than 100 pairs of men's trousers and 16 women's dresses were forgotten by travellers in Belgian trains during the past six months, according to a "lost property" list just issued by the Belgian National Railways. The list includes more than 2,000 other articles of clothing mostly scarves, gloves, slippers, raincoats, and hats. Officials also found a gun, a pistol, two bayonets, a packet of cartridges, and two war medals.

When the General Manager of Railways, Mr. H. Chapman, O.B.E., opened a recreation hall for the use of natives employed here by the Rhodesia Railways, the local Bantu Benefit Society presented him with an address in which he was saluted as "Lord of Lords, and Manager of Managers, Director of Directors, the founder of the cool and quenching water and of the widespread shade of the banyan tree in which all birds build their nests in time of the spring season, singing all the time their gay songs and melodies." Mr. Chapman must have captured a new sense of the poesy of the song of the railroad wheels.—A press message from Bulawayo.

A correspondent writing the other day in the *Liverpool Post* set the following railway query and also supplied the answer: "We have at James Street the Overhead line about 20 ft. above the street, the Dock Board's metals at street level, and the Mersey Underground tracks about 100 ft. below. How would you route a railway vehicle, say, for instance, the Overhead's midget "shunter" (did you know it owns a steam engine?), so that it passes this point at each of the three levels in turn? It can be done." The answer was as follows: "Near Seaforth Sands station the Overhead line has two spur tracks connecting with the old L. & Y. system. After reversal back towards Liverpool,

access to the Dock Road railway line might be gained via any of the former L. & Y. Dock Road goods depots. After passing James Street at this level the vehicle would next have to turn into the L.M.S.R. Park Lane goods station, then travel via Edge Hill, Runcorn, Helsby, and Hooton, to Rock Ferry station. A few yards from the platform crossover, tracks connect the joint railway metals with the Mersey line, and by running the vehicle through the tunnel the problem would be solved."

### HOW IT IS DONE ON THE RAILWAY

Engineering never says "Yes" impulsively, as you and I would. It qualifies with suavity and pursed lips. But it draws plans: ten or twelve feet of complicated 1/40th of an inch to a foot scale plans it draws, and, in the fullness of time, submits them. Then Traffic has to do a little qualifying to keep its end up: and there are more conferences, and more plans. And then quite a number of interests get friendly round tables: so that in the end you have the enchanting spectacle of Permanent Way, and Signals, and New Works, and Divisional Superintendent, and Traffic, and Stationmaster (the latter a trifle faint but still pursuing) and Electrical, all of one mind, and agreed upon a Zero Hour on which to begin the job, and, graver matter, a Zero Hour when it must be finished. That Zero Hour was about nine months

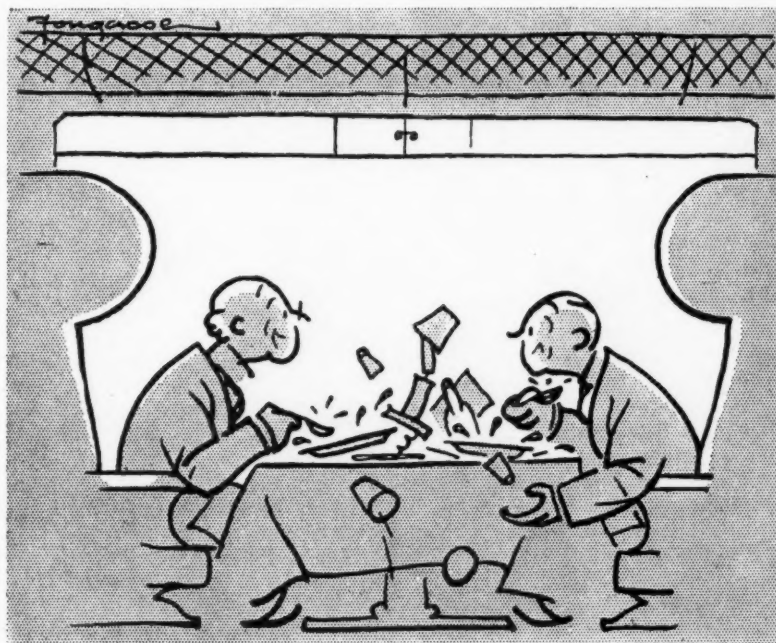
Down with damage and delay!!  
They destroy dependability on which our reputation and livelihood depend.

ADAM AND EVE  
DIDN'T HAVE TO  
WORRY ABOUT  
TRANSPORT

YOU CAN MAKE  
OUR CUSTOMERS  
AS CAREFREE

No. 2 of a new series—the third—of "claims prevention" posters issued by the Chief Goods Manager, G.W.R., for exhibition to the staff

hence... And each man disappeared to his own particular hell of responsibility."—From "Over the Points," a quarterly review of matters concerning the Southern Railway written by E. P. Leigh Bennett.



"I CAN REMEMBER WHEN THIS TRAIN WAS SO HORRIBLY SLOW THAT YOU COULD EAT YOUR MEAL IN COMFORT."

[Reproduced by permission of the Proprietors of "Punch".]

## OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

### ARGENTINA

#### Entre Rios Railways' Expropriation Lawsuit

As reported in THE RAILWAY GAZETTE for December 4, these railways sued the National Government for the sum of \$5,000,000 paper, as compensation for the expropriation in 1929 of the Hasenkamp-Crespo branch. The company's claim was rejected in the first instance, but was eventually fixed by the Federal Court at \$3,500,000 paper. The case was then taken to the Supreme Court, which has now fixed the amount of the compensation at \$4,278,608 paper.

#### Derailments on State Railways

Owing to a landslide caused by torrential rains, the Panamericano international express from Buenos Aires to La Paz, Bolivia, was derailed on the Central Northern (State) Railway between Tilcara and Huacalera stations in the Province of Jujuy. The driver of the train was killed, but there were no other casualties. A few days later, traffic over the same line was again similarly interrupted.

Another serious derailment occurred on January 12 on the completed portion of the projected railway from Salta to Socompa, when a mixed passenger and goods train from San Antonio de los Cobres to Salta, descending a gradient between Cachinal and Incahuasi stations, left the rails. The passenger coaches and dining cars overturned and became uncoupled from the rest of the train, which ran down the slope with great velocity, owing to the failure of the brakes, the locomotive being impelled by the weight of the wagons which were loaded with 300 tons of materials. This derailment occurred close to the edge of a precipice, but only slight injuries were reported amongst the passengers, and no lives were lost.

#### Fatal Level Crossing Accident

One of the worst level crossing accidents yet recorded on any of the Argentine railways occurred near Burzaco station on the local section of the B.A.G.S.R. on January 11, when a motor car containing seven persons was run down by a train while crossing the track at this point. Three of the occupants were killed outright, two died shortly after being admitted to hospital, and the other two were very seriously injured. When the car approached the crossing, it was detained by the barriers, which had been lowered for a train bound for Buenos Aires. As soon as this train had passed, the crossing keeper incautiously raised the barriers, without, apparently, noticing the approach of another train from the opposite

direction, travelling at 60 km.p.h., which struck the car broadside.

### COLOMBIA

#### Collision on Antioquia Railway

According to telegraphic advices from Bogotá, a disastrous collision occurred on January 10 on the above railway between a freight and a passenger train. The passenger train, in which some 90 persons were travelling to Medellin, was obliged to stop owing to the line being obstructed by trees which had been uprooted by a violent storm and blown across the track. The driver of a goods train which was following claimed that his vision was obscured by heavy rain, which prevented him from seeing the passenger train, with the result that the goods train crashed into the rear of the passenger train, 14 persons being killed and over 30 others injured.

[We presume that, due to the fallen trees having interrupted telegraphic communication, block working had been temporarily suspended.—ED. R.G.]

### INDIA

#### New Construction

It is gathered that satisfactory progress has been made by the Mysore Railways in connection with the extension of the Shimoga—Arasalu Railway. The construction is likely to be completed in January, 1938. This line and its further extension to Anandapuram, sanctioned in 1931 at an estimated cost of Rs. 7.59 lakhs, are parts of an ambitious project for a railway to Bhatkal on the west coast, where the development of a port is contemplated.

#### Railways in the Legislature

On February 2 the Bill relating to the suppression of ticketless travel on Indian railways, which was deferred for circulation in the last session of the Legislative Assembly, was taken up on February 2, and referred to a select committee. The Railway Member promised to consider the removal of the objectionable clauses in the Bill. There was, nevertheless, a great deal of opposition, and much capital was made of the argument that the stringent measures contemplated in the Bill would drive passengers to the road services.

The Standing Finance Committee for railways met to consider the Railway Budget, to be presented in the Assembly on February 16. [Telegrams from India indicate that the current year, ending March 31, is likely to close with a railway surplus for the first time since 1930.—ED. R.G.]

The Legislative Assembly passed a number of supplementary grants for

railways, including a sum of Rs. 2.18 lakhs, representing the cost of the Wedgewood Committee. Several members protested against the absence of Indians on the committee, while others raised the point that the cost of the committee should be borne by the general revenues.

#### Railway Accidents

A serious collision between a motor bus and a passenger train took place on January 14 between Timmapur and Shadnagar stations, about 30 miles from Secunderabad, on the metre gauge section of the Nizam's State Railway. As a result, 13 bus passengers were killed on the spot and seven received serious injuries, of whom five subsequently died in hospital. The bus was not one of the fleet operated by the Nizam's State Railway.

#### English Procedure in Despatch of Goods

Some Calcutta business men at a recent hearing in that city represented to the Wedgewood Committee the advantages of making railway receipts negotiable instruments similar to bills of lading. Sir Ralph Wedgewood, it is understood, explained the simple practice obtaining on English railways for the despatch of goods. The consignor sends information of destination and name of consignee to the railway along with the goods to be despatched. No documents of the nature of railway receipts used in India are issued by the railway. The latter communicates direct with the consignee. The practicability of adopting this procedure in India is, however, open to question.

### UNITED STATES

#### Freight Rates Inquiry

The entire railway freight rate structure is under examination by the Interstate Commerce Commission in a proceeding in which the railways are seeking a simplification of tariffs and also modest increases in rates on some traffics not subject to water and road competition. The railways have asked the commission to deal with the case piecemeal—by commodity groups—so that, if changes are to be allowed with respect to one commodity group, these can be made effective at once rather than waiting for the proceeding to be disposed of as a whole. The trading community object to this proposal, and as yet the commission has not ruled upon it.

#### Long-and-Short-Haul Repealer

A Bill to repeal the "long-and-short-haul" clause of the Interstate Commerce Act (which makes it practically impossible for the railways to compete with Panama Canal shipping for traffic to and from the Pacific Coast) has again been introduced in Congress, and committee hearings upon it are now being held. A similar Bill was



passed by a large majority in the Lower House last year, only to be "filibustered" to death in the Senate by Senator Wheeler (Chairman of the Senate Committee on Interstate Commerce). This year, if relatively early passage is secured in the Lower House, it may be possible to break through the "filibuster."

Enactment of this legislation should not only have a favourable effect upon railway earnings, but would be even more important as a symbol of a turn away from excessive regulations. The Interstate Commerce Commission will this year celebrate its golden jubilee; and since the date of its inauguration, its powers have been constantly augmented and those of railway managements correspondingly diminished. The enactment of the long-and-short-haul repealer would probably be greeted as an indication that, at last, a limit of regulatory encroachment had been reached.

#### I.C.C. to be Shorn of Power?

Meantime the commission has been placed on the defensive by the President's proposal to reorganise the administrative branch of the Government. Under this plan the commission would be shorn of all its administrative powers (over safety devices, accounting, &c.), and would sit only as a tribunal. Strenuous opposition has developed to the scheme, in so far as it would affect the Interstate Commerce Commission, the objection being made that it is an arm of the legislative, rather than the executive branch of the Government.

## GERMANY

### Reconstruction of Mainz Station

The replacement of the original and, (for its time) large station at Mainz, belonging to the Hessian-Ludwigs Railway, has been under consideration since its traffic outgrew it about 1904. The war and other causes, however, delayed the scheme until recently, and it was not until August, 1935, that work was begun. The first stage of the rebuilding was completed last November to the designs of Reichsbahnoberrat Kleinschmidt, and includes spacious station buildings in modern style. Their main features embody a booking hall with bank-type counters instead of the usual ticket windows, and, to enable the booking clerks to work in comfort, free from draughts, warm air can be supplied to the hall by a special plant. The whole building is, in fact, centrally heated, with automatic temperature control. Ticket printing machines are installed. There are no advertisements on the walls, all being in special glazed display frames on stands. Also there are no sheet timetables, but instead time-books are provided, specially bound and clamped to desks, with lights over them and stools for the users. The signalling has been remodelled, and a multiple-row power frame put in.

## RHODESIA

### New Rhodesia-Union Railway Agreement

The difficulty that had arisen in connection with the proposed debenture conversion scheme by the Rhodesia and Mashonaland Railway Companies was referred to in THE RAILWAY GAZETTE of June 19, 1936. It will be recalled that the debenture conversion to a lower rate of interest was hampered by the discovery that, under a clause of the agreement of 1894, under which the main line from Vryburg to Palapye was built, the Government of the Union of South Africa and the Imperial Government were considered to possess an option to purchase this section of line at the cost of construction. Negotiations have been proceeding between the railway companies, the Union Government and the Southern Rhodesia Government as to the interpretation of this clause in the 1894 agreement, and recent discussions have resulted in a new agreement affecting the option to purchase. [This agreement has already been outlined in these columns in our issue of February 5.—ED. R.G.]

Some criticism of the agreement has been made in Rhodesia, but much is misinformed and without a full appreciation of the position. From the Rhodesian point of view, the agreement should facilitate the early conversion of the railway debentures, as the Union cannot exercise the purchase option for a long period of years. The debenture conversion should meet with success and thus reduce the interest at present payable, which will benefit the users of the Rhodesia Railways. It is also understood that legal opinion on the right of the option of the Union to purchase the Vryburg—Palapye section of the line was to the effect that it was not contestable with much hope of success. Had the claim been contested, it is probable that a lengthy and costly legal action would have resulted only in delay to the debenture conversion. The agreement will be discussed at the next session of the Southern Rhodesia Legislative Assembly early in March, when a full statement is expected from the Minister of Mines and Works.

### Beira Railway Conversion Scheme

A very successful conversion of Beira Railway debenture stock was carried out in January, when £2,000,000 of debentures were converted from 6½ per cent. plus 1 per cent. sinking fund, to 5 per cent. plus 1 per cent. sinking fund. The reduction in the rate of interest will mean a saving in interest charges of £30,000 per annum. The Beira Railway lies almost entirely in the Mocimbeque Company's territory in Portuguese East Africa, and is the connecting link between the Rhodesian railway system and the Port of Beira. While, under the new Rhodesia—Union railway agreement, import traffic may not develop to the same extent, the Port of Beira will continue to form the

outlet for the very valuable export trade of Rhodesia, which is assured for many years. It is believed that the Beira Works Limited, the port company, also intends to float a conversion scheme.

### Increased Track Relaying

Good progress is being made with the main line track strengthening by the substitution of 80-lb. rails for the existing 60-lb. rails on the 160-mile section from Salisbury to Hunters Road, and in January, 63 miles had been completed, and relaying is continuing at the rate of about 20 miles a month. Work will soon begin on the 134 miles of line from Hunters Road to Bulawayo, for which an order has been placed in England for 20,000 tons of 80-lb., 40-ft. rails and the necessary fastenings.

On another section of the main line, that across the Pungwe Flats between Vila Machado and Beira, a stretch of 44 miles of old round top rails will be replaced by new 60-lb. R.B.S. flat-bottomed rails, 40 ft. long, and 4,900 tons of track material have been ordered and will begin to reach Beira in March. Additional stone ballast will help to strengthen the track both on this section and on the Salisbury-Bulawayo main line.

## SWITZERLAND

### Improving Financial Position

Reports examined and discussed at a meeting of the Federal Railways Administrative Board at Zurich on February 3 covered questions of rates as affected by the recent devaluation, flotation of loans in 1937, staff wages, and the provisional profit and loss account for 1936. The latter shows expenses to have been in excess by Fr. 68,650,000, or Fr. 13,050,000 less than the amount on which the 1937 budget was based. This improvement is due to a decrease of Fr. 6,755,000 in the net interest paid out, the gradual increase of traffic since October last, and further savings on expenditure.

## NETHERLANDS EAST INDIES

### Night Expresses in Java

Night expresses have recently been introduced in Java and are proving very popular. During the first week in November, for instance, two instead of the normal one sleeping car had to be run on each train between Soerhaja and Batavia and vice versa, 85 per cent. of the accommodation being occupied. The management presented each of the first 500 sleeping car passengers with an illustration of one of the 4-6-4 class 1300 locomotives that work the night expresses over the mountain section between Proepoek and Poerwokerto. The night service has served to relieve the single day express that alone ran daily in each direction previously.



## SYSTEM OF OPERATING LONGMOOR MILITARY RAILWAY

*The principal feature in this method of operating is the system of opening and closing the signal boxes when different numbers of intermediate boxes are required for training operating tradesmen*

*By MAJOR F. J. BIDDULPH, M.C., R.E.*

MUCH interest has been evinced by operating, engineer, signal and telegraph and other railway officers, visiting the Railway Training Centre, in the system of opening and closing signal boxes on the Longmoor Military Railway, which is an instrument primarily for training novices as military railwaymen. At certain times of the year, notably in winter, when the training of operating tradesmen is in full swing, a number of signal boxes are required to be open in order to train blockmen (the military equivalent of signalmen). At other times of the yearly programme, for example in the summer, when collective engineer training takes precedence, there is a shortage of operating tradesmen owing to the calls of regimental duties. The line is then worked with only one or two boxes open and sometimes none at all.

By a reference to the diagram opposite it will be seen that there are eight block posts (Hogmoor and Weavers Down being intermediate sidings) and the system by which the line can be worked with all of these closed or any number of them open, in order to meet the requirements enumerated, will now be described.

The one engine in steam token No. 0 (O.E.S. No. 0) is marked Bordon-Liss and with this token in possession of the driver none of the block instruments on the system can be worked. The system is then operated with one engine in steam. O.E.S. No. 0 is provided with two keys as illustrated. The key on one side will unlock all the main line points from Longmoor to Bordon inclusive, the key on the other side will unlock those at Liss Forest Road, Weavers Down and Liss.

To open up Longmoor box, O.E.S. No. 0 is inserted in the token locking box at Longmoor cabin and turned. The slide of the locking box can then be pulled, which locks away O.E.S. No. 0 and releases O.E.S. No. 1 and O.E.S. No. 3. O.E.S. No. 1 is the token for the Longmoor-Bordon section and O.E.S. No. 3 for the Longmoor-Liss section. They are each provided with a key which will unlock the points in their respective sections. The system can now be operated as two sections, but with only one engine in steam in each section. Trains can be crossed only at Longmoor.

### Miniature Staff and Token Instruments

Proceeding towards Bordon either Whitehill or Oakhanger can be opened next. To open Oakhanger box, O.E.S. No. 1 is inserted in token locking box "B" and turned. The slide is then pulled and locks this token away and releases a miniature staff, a Webb and Thompson staff, and a key for lever No. 4 of the ground frame; this key is similar to that on O.E.S. No. 1. The Longmoor-Oakhanger section is worked with miniature staff electric token instruments. By placing the miniature staff thus obtained in the staff instrument this section is opened for electric token working. Miniature staffs are provided with a key wherewith to unlock points between Oakhanger and Longmoor when the boxes between these two stations are closed. The Webb and Thompson staff is valid for the Oakhanger-Bordon section, and the one obtained from the token locking box can be used either as an O.E.S. token

between Oakhanger and Bordon or, if it is required to open Bordon box, it is given up at that station by the driver and inserted in the staff instrument at Bordon.

Whitehill can now be opened by a train proceeding there from either direction. The driver gives up the Longmoor-Oakhanger miniature staff at Whitehill and, in the manner described above, by inserting this in token locking box "B," a tablet for the Whitehill-Longmoor section and one for the Whitehill-Oakhanger section respectively can be withdrawn, together with a key for the points.

Should it be desired to open Whitehill before Oakhanger, O.E.S. No. 1 is inserted in token locking box "A" at Whitehill when the Whitehill-Longmoor tablet, the O.E.S. No. 2 valid between Whitehill and Bordon, and the key for the points can be obtained. To open Oakhanger subsequently O.E.S. No. 2 is inserted in the token locking box "A" at Oakhanger.

In the case of Woolmer there is a slight additional complication in that the down main between Longmoor and Woolmer is utilised as a siding during single line working and signalled with a disc signal. In order to ensure that this signal is locked for double line working, a key is withdrawn from its lever in Longmoor box. This key together with the Longmoor-Whitehill tablet must be inserted in the token locking box at Woolmer. Pulling the slide of this box switches in the Woolmer-Longmoor double-line block instruments, and releases the Woolmer-Whitehill electric tablet and the key for the points.

### The Cardinal Principle for all Cases

In every case the principle is that in order to split a section into two, the token for the long section must be locked away before the tokens for the short sections are made available. To close the boxes the reverse procedure is applicable; the signalman must lock away the two tokens for each side of his box before he can obtain the long section token. Boxes must be closed in the reverse order to which they were opened.

The Longmoor-Liss section is worked by one engine in steam or by the telephone and ticket system instead of by electric token instruments. The same principles for opening and closing boxes are, however, applied. For example, to open Liss Forest Road the Longmoor-Liss one engine in steam key (O.E.S. No. 3) is placed in the token locking box at the station. The action of pulling the slide locks away O.E.S. No. 3, cuts in the block telephones, and releases O.E.S. No. 4 which is the one engine in steam token between Liss Forest Road and Liss. The latter token, O.E.S. No. 4, is then available to open Liss station, and similarly bring the block telephone at that station into circuit.

Alternatively should it be required to open Liss and not Liss Forest Road, O.E.S. No. 3 can be utilised to cut in the block telephone at that station. It will be realised that although there two or more tokens which are valid for any one portion of the line, only one token can be available at a time.

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## BRITISH RAILWAY STATISTICS

"The Railway Gazette" monthly table for Nov., 1936, as compared with Nov., 1935, compiled from the Ministry of Transport Statement No. 204

| Description   | Great Britain* | G.W.R.      | L.N.E.R.     | L.M.S.R.     | S.R.        |
|---|----------------|-------------|--------------|--------------|-------------|
| <b>PASSENGER TRAIN TRAFFIC—</b>                             |                |             |              |              |             |
| Number of pass. journeys (ex. season ticket holders)        | 100,406,496    | 6,742,429   | 13,936,008   | 22,165,250   | 16,984,448  |
| Increase (+) or decrease (—)                                | + 492,419      | — 243,179   | — 148,303    | — 588,028    | + 79,068    |
| Passenger receipts (excluding season ticket holders)        | £3,309,346     | £407,256    | £649,872     | £974,287     | £705,376    |
| Increase (+) or decrease (—)                                | + £52,427      | — £167      | + £10,900    | + £5,545     | + £16,511   |
| Season ticket receipts                                      | £784,634       | £46,705     | £125,532     | £204,735     | £252,842    |
| Increase (+) or decrease (—)                                | + £74,190      | + £3,015    | + £7,267     | + £15,564    | + £26,244   |
| Parcels and misc. traffic receipts (excluding parcels post) | £1,045,365     | £191,760    | £308,009     | £412,009     | £113,410    |
| Increase (+) or decrease (—)                                | + £21,553      | + £4,579    | + £1,745     | + £17,403    | — £2,783    |
| <b>FREIGHT TRAIN TRAFFIC—</b>                               |                |             |              |              |             |
| Freight traffic (tons) (excluding free-hauled)              | 23,344,353     | 5,433,939   | 10,762,705   | 10,860,891   | 1,289,090   |
| Increase (+) or decrease (—)                                | — 6,102        | — 263,367   | — 186,219    | — 274,143    | — 144,898   |
| Net ton-miles (excluding free-hauled)                       | 1,311,950,544  | 243,286,086 | 446,443,897  | 533,664,885  | 53,058,608  |
| Increase (+) or decrease (—)                                | — 35,157,663   | — 763,444   | — 11,823,375 | — 15,714,558 | — 5,081,131 |
| Average length of haul (miles) (excluding free-hauled)      | 56.20          | 44.77       | 41.48        | 49.14        | 41.16       |
| Increase (+) or decrease (—)                                | — 1.49         | + 1.93      | — 0.38       | — 0.20       | + 0.62      |
| Freight traffic receipts                                    | £7,473,887     | £1,253,000  | £2,491,000   | £3,111,000   | £378,528    |
| Increase (+) or decrease (—)                                | — £1,121       | — £21,892   | + £21,347    | + £17,000    | — £21,190   |
| Receipts per ton-mile                                       | 1.367d.        | 1.24d.      | 1.34d.       | 1.40d.       | 1.71d.      |
| Increase (+) or decrease (—)                                | + 0.035d.      | — 0.02d.    | + 0.05d.     | + 0.05d.     | + 0.06d.    |
| Freight train-loads: Average train-load (tons)              | 128.63         | 135.82      | 133.98       | 126.40       | 151.24      |
| Increase (+) or decrease (—)                                | — 4.94         | — 2.67      | — 5.63       | — 5.03       | + 40.52     |
| Net ton-miles—  |                |             |              |              |             |
| Per train engine-hour                                       | 907.20         | 984.95      | 991.78       | 836.92       | 787.11      |
| Increase (+) or decrease (—)                                | — 103.69       | — 76.98     | — 79.69      | — 135.21     | — 86.82     |
| Per shunting-hour   | 849.00         | 794.97      | 945.74       | 858.38       | 541.67      |
| Per total engine-hour                                       | 438.57         | 439.91      | 484.10       | 423.76       | 320.86      |
| Net ton-miles per route-mile per working day                | 2,865          | 2,839       | 3,086        | 3,363        | 1,139       |
| Increase (+) or decrease (—)                                | — 72           | — 3         | — 81         | — 105        | — 94        |
| Wagon-miles. Total  | 369,767,138    | 67,089,504  | 128,038,142  | 154,442,056  | 18,017,421  |
| Increase (+) or decrease (—)                                | — 5,632,037    | + 95,780    | — 1,476,784  | — 4,301,123  | + 168,822   |
| Percentage of loaded to total                               | 68.43          | 68.75       | 66.11        | 70.45        | 66.80       |
| Wagons per train. Total                                     | 34.34          | 34.91       | 34.60        | 34.25        | 32.38       |
| Increase (+) or decrease (—)                                | — 0.90         | — 0.65      | — 0.85       | — 1.23       | + 0.36      |
| Loaded  | 23.50          | 24.00       | 22.88        | 24.13        | 21.63       |
| Empty   | 10.84          | 10.91       | 11.72        | 10.12        | 10.75       |
| Train-miles. Coaching—Per train-hour                        | 14.96          | 13.95       | 14.22        | 13.99        | 17.84       |
| Per engine-hour   | 12.01          | 11.13       | 11.02        | 10.75        | 14.79       |
| Train miles. Freight—Per train-hour                         | 8.25           | 8.77        | 8.65         | 7.65         | 9.62        |
| Per engine-hour   | 3.41           | 3.26        | 3.65         | 3.36         | 3.12        |
| Engine miles. Total   | 46,693,737     | 7,457,862   | 12,909,980   | 17,272,206   | 6,069,912   |
| Increase (+) or decrease (—)                                | + 637,806      | + 109,553   | + 165,882    | + 274,047    | + 44,453    |
| Mileage run by engines. Total train-miles—                  |                |             |              |              |             |
| Coaching  | 22,593,277     | 3,118,914   | 5,146,147    | 7,162,034    | 4,432,233   |
| Freight   | 10,769,216     | 1,921,564   | 3,700,360    | 4,508,993    | 556,427     |
| Engine-hours in traffic. Total                              | 5,240,650      | 897,027     | 1,551,471    | 2,090,769    | 497,077     |
| Increase (+) or decrease (—)                                | + 205,605      | + 32,366    | + 42,438     | + 125,807    | + 1,795     |
| Shunting miles per 100 train-miles—                         |                |             |              |              |             |
| Coaching  | 7.58           | 7.03        | 6.73         | 8.22         | 8.53        |
| Freight   | 75.28          | 85.17       | 69.63        | 71.85        | 98.77       |

Passenger Traffic Statistics: Number of journeys, receipts, and receipts per journey (excluding season ticket holders)—November, 1936

| Subject                    | Great Britain | G.W.R.    | L.N.E.R.   | L.M.S.R.   | S.R.       | Cheshire Lines | Liverpool Overhead | L.P.T.B.†  | Mersey    |
|----------------------------|---------------|-----------|------------|------------|------------|----------------|--------------------|------------|-----------|
| <b>Full fares—</b>         |               |           |            |            |            |                |                    |            |           |
| Pass. journeys             | 33,255,418    | 637,054   | 1,069,360  | 1,369,024  | 2,555,128  | 13,746         | 160,825            | 26,607,111 | 84,822    |
| Gross receipts             | £803,452      | £60,273   | £106,491   | £105,289   | £156,614   | £2,147         | £1,615             | £355,793   | £1,489    |
| Receipts per pass.         | 5.80d.        | 22.71d.   | 23.90d.    | 18.46d.    | 14.71d.    | 37.49d.        | 2.41d.             | 3.21d.     | 4.21d.    |
| <b>Reduced fares—</b>      |               |           |            |            |            |                |                    |            |           |
| Excursion and week-end—    |               |           |            |            |            |                |                    |            |           |
| Pass. journeys             | 35,872,916    | 3,798,544 | 8,187,178  | 12,378,990 | 7,882,009  | 390,754        | 73,572             | 1,422,416  | 697,278   |
| Gross receipts             | £1,792,399    | £272,830  | £406,498   | £635,542   | £390,141   | £18,194        | £638               | £30,439    | £9,886    |
| Receipts per pass. journey | 11.99d.       | 17.24d.   | 11.92d.    | 12.32d.    | 11.88d.    | 11.17d.        | 2.08d.             | 5.14d.     | 3.40d.    |
| Workmen—                   |               |           |            |            |            |                |                    |            |           |
| Pass. journeys             | 27,762,213    | 1,908,170 | 3,743,390  | 7,449,644  | 5,878,334  | 260,838        | 220,722            | 7,124,062  | 237,486   |
| Gross receipts             | £408,959      | £28,294   | £61,488    | £120,984   | £98,094    | £4,428         | £1,793             | £80,334    | £2,126    |
| Receipts per pass. journey | 3.54d.        | 3.56d.    | 3.94d.     | 3.90d.     | 4.00d.     | 4.07d.         | 1.95d.             | 2.71d.     | 2.15d.    |
| Other—                     |               |           |            |            |            |                |                    |            |           |
| Pass. journeys             | 3,510,632     | 397,557   | 935,107    | 964,954    | 668,419    | 27,010         | 45,176             | 405,201    | 10,642    |
| Gross receipts             | £297,371      | £44,593   | £74,048    | £108,449   | £60,041    | £3,245         | £290               | £3,946     | £122      |
| Receipts per pass. journey | 20.33d.       | 26.92d.   | 19.00d.    | 26.97d.    | 21.56d.    | 28.83d.        | 1.54d.             | 2.34d.     | 2.75d.    |
| <b>Total—</b>              |               |           |            |            |            |                |                    |            |           |
| Pass. journeys             | 100,406,496   | 6,742,429 | 13,936,008 | 22,165,250 | 16,984,448 | 692,372        | 500,295            | 35,558,790 | 1,030,228 |
| Gross receipts             | £3,309,346    | £407,256  | £649,872   | £974,287   | £705,376   | £28,034        | £4,336             | £470,512   | £13,623   |
| Receipts per pass.         | 7.91d.        | 14.50d.   | 11.19d.    | 10.55d.    | 9.97d.     | 9.72d.         | 2.08d.             | 3.18d.     | 3.17d.    |

\* All standard gauge railways

† Includes passengers originating on the railway undertakings, and on the Whitechapel and Bow Joint Railway

## 4-6-4 + 4-6-4 BEYER-GARRATT LOCOMOTIVES FOR SUDAN

*These locomotives for the Sudan Railways are the first to have this wheel arrangement. The combination of large coupled wheels, a 12-ton axle load for 50-lb. rails, and a tractive effort of 40,000 lb., ranks the design as one of outstanding interest*

BEFORE proceeding with the description of this new design of locomotive, the general characteristics and conditions peculiar to this important railway system may be briefly recalled. The Sudan (Government) Railways have a route mileage of 2,021, and also include the operation of river services over a distance of 2,325 miles, extending to Shellal in the north, where connection is made with the Egyptian State Railways; and to Juba in the south, whence a 100-mile motor service connects with the Kenya and Uganda Railways.

The Sudan Railways are constructed to the 3-ft. 6-in. gauge, and are controlled by a State Administration with headquarters at Atbara, where also are situated the principal workshops. Great tracts of the territory traversed by the system consist of waterless desert with severe, sandy conditions, water difficulties, and a high average temperature reaching as much as 160° F. in the sun at times. Both skilled and unskilled labour in the works, on the permanent way, in running sheds, on the locomotives, or connected with the running of trains, consists mainly of Sudanese natives trained on the spot, while long stretches of single line between attended crossing stations constitute a set of conditions resulting in operating and engineering problems of unusual interest and difficulty. The productive regions of the territory are confined mainly to the valley of the Nile and its southern tributaries, and the recently developed cotton country in the Kassala and Gedaref regions.

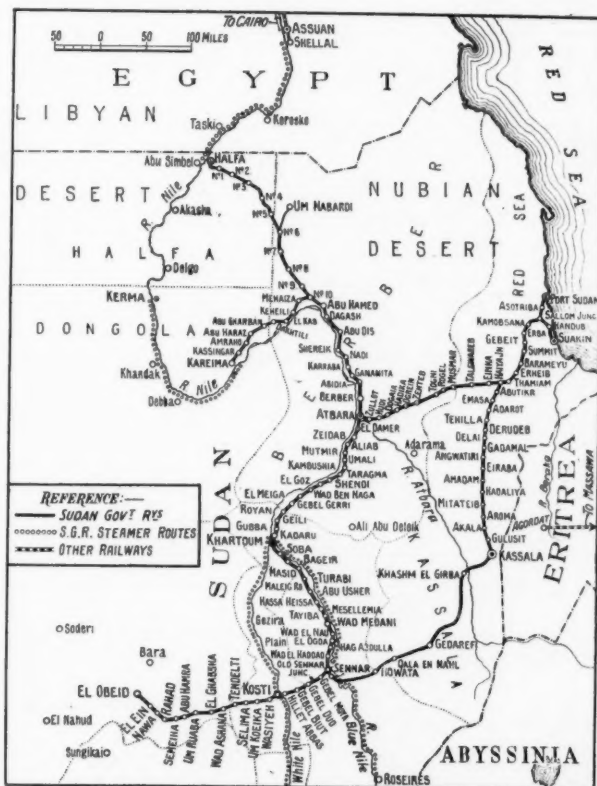
Referring to the map, reproduced alongside, it will be seen that from Wadi Halfa (0 miles) a line traverses the Nubian Desert to Abu Hamed (227 m.), thereafter running parallel with the Nile to Atbara (378 m.). From Atbara the Red Sea line leads eastwards to the well-equipped harbour of Port Sudan, 294 miles distant, and the old port of Suakin. Reverting to Atbara (0 m.), the main line continues southwards, following the Nile, to Khartoum (194 m.), and thence along the Blue Nile to Sennar (361 m.). From Sennar (0 m.) one line continues westwards to El Obeid (260 m.), and one of recent construction eastwards to Gedaref and Kassala (282 m.), where it joins the line built in 1926-27 from Haiya, a point on the Red Sea line, 126 miles from Port Sudan. This line, which is 215 miles long, with a ruling gradient of 1 in 150 and sharpest curve 1,910 ft., gives one of the most fertile parts of the Sudan direct access to the sea. The longest branch line is from Abu Hamed to Kareima, a distance of 154 miles. The mileages quoted indicate the great distances separating important centres in this system. The same also applies to the steamer services operated; the Khartoum—Juba service, for example, covers no less a distance than 1,100 miles.

Generally speaking, the configuration of the country traversed by the railway is flat, except in the region of the Red Sea hills, where there is continuous rising gradient from Sallom Junction to Gebeit, a distance of 50 miles, containing 16 miles of 1 in 100 and lesser grades to a point 80 miles from Port Sudan. The sharpest curve on the main line is 955 ft., but all locomotives are designed to take a radius of 360 ft.

The track consists of flat-bottom rails laid on either

steel or wooden sleepers according to the district. The rails are of two sections, 75 lb., and 50 or 52 lb. per yd., the light rail existing from Wadi Halfa to Abu Hamed, and from Haiya Junc. to Kassala, Sennar, El Obeid, and Khartoum; and other branch lines. The rails rest on bearing plates, and the joints of the rails are staggered. The line in the desert regions is ballasted with gravel or sand, which is also packed tightly under the bottom flange of the rails, thus forming a continuous elastic support; the result is a very smooth running track. In certain bad sections stone metalling is applied.

There are 162 locomotives. The latest main line engines are chiefly of the Pacific and Prairie types, used principally for passenger work, the former having 5 ft. 2½ in. driving wheels. For the heavier work, light and heavy Mikado engines are in use. The heavy Mikados, which have a 4-ft. 6-in. driving wheel and a tractive effort of 30,000 lb., are used principally on the heavy gradients of the Red Sea line, while the light Mikados of 26,000 lb. tractive effort, with 4-ft. 3-in. wheels, are generally confined to the 50-lb. rail sections. The large amount of 50-lb. rail still existing brought about an examination of the possibilities of an articulated engine of the Garratt type which would provide considerably more power on this



Sketch map of the Sudan Railways

light rail, and at the same time haul an even greater load than existing engines when used on the main line. With this general consideration in view, the Beyer-Garratt engine was decided upon and an order for four placed with Beyer, Peacock & Co. Ltd. These, the subject of the present article, have now been delivered and some are actually in service.

The maximum axle-load was fixed at 12 tons, a higher figure than is usual with a 50-lb. rail. This has enabled a tractive effort of 38,400 lb. at 75 per cent., or 43,520 lb. at 85 per cent., to be obtained, thus giving a 48 per cent. increase over the existing light Mikados and an appreciable increase over the heavy Mikados. At the same time a return has been made to an engine of six-coupled characteristics, with its obvious advantages for the arduous conditions of this railway, while an important increase in the diameter of the wheel, namely to 4 ft. 9 in. as compared with 4 ft. 3 in. and 4 ft. 6 in. of the Mikado type, will permit of speeds up to 50 m.p.h., and therefore the use of these new engines on passenger trains as required. They are thus not only able to operate universally over the whole system, but will be capable of hauling bigger loads than any other engine.

While the haulage of water tanks is essential on certain sections, particularly on the Kassala branch, where between Haiya Junction and Kassala there are actually 151 miles without water, nevertheless, it was required that these engines should be capable of operating on the hilly section from Port Sudan without tanks, as do the Mikados, and for this reason, as well as a general necessity on a railway of this character, the maximum possible water was required. Accordingly the builders submitted a design incorporating for the first time four-wheel bogies in place of the customary single pairs of carrying wheels, and the design was duly accepted by the administration. This feature has required a very careful consideration of the whole design, but from an inspection we had the opportunity to make at the builder's works during manufacture, we feel persuaded that this type should not only function well but is also an important advance in the Garratt system of articulation. It also serves to illustrate the ease with which any type of wheel arrangement can be incorporated in this system of articulation.

The locomotive has been designed to the requirements of the Chief Mechanical Engineer, Mr. J. H. Dunbar, and under the supervision and inspection of Mr. C. G. Hodgson, M.I.Mech.E., Consulting Engineer to the Sudan Government, and who for many years was Chief Mechanical Engineer of this railway, while the latest experience of the makers has been incorporated and the peculiar conditions of operation in the Sudan duly borne in mind.

The various illustrations give a good idea of the size and robustness of the engine, which ranks as the largest in the world on this weight of rail. The following are the principal dimensions:—

|                                      |       |                     |
|--------------------------------------|-------|---------------------|
| Cylinders (4)                        | .. .. | 16½ in.             |
| Piston stroke                        | .. .. | 26 in.              |
| Coupled wheels, dia.                 | .. .. | 4 ft. 9 in.         |
| Boiler pressure                      | .. .. | 200 lb. per sq. in. |
| Heating surface—                     |       |                     |
| Tubes                                | .. .. | 1,776 sq. ft.       |
| Firebox and arch tubes               | .. .. | 184 "               |
|                                      |       | 1,960 "             |
| Superheater (inside)                 | .. .. | 440 "               |
| Total                                | .. .. | 2,400 "             |
| Grate area                           | .. .. | 43.2 "              |
| Total water capacity                 | .. .. | 7,000 gallons       |
| Coal capacity                        | .. .. | 10 tons             |
| Total weight in working order        | .. .. | 169 "               |
| Tractive effort at 75 per cent. B.P. | .. .. | 38,400 lb.          |

### The Boiler

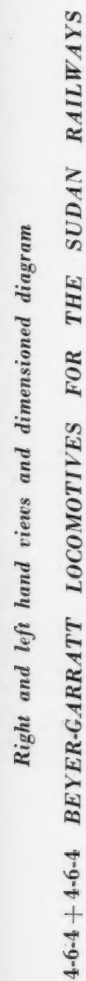
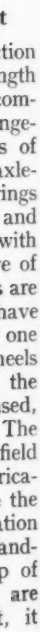
The boiler is of the construction usual in this type of engine, thanks to the freedom from restrictions, the main features being the large diameter of boiler barrel (6 ft. outside) and a deep and wide firebox. The firebox is of the Belpaire type with inside plates of copper, and the boiler as a whole is stayed in the usual manner by means of direct roof, transverse and longitudinal stays, &c. Four arch tubes fitted with Noble's patent ferrules are fitted in the firebox, and as usual support the firebrick arch. The barrel contains 36 tubes 5½ in. dia. (outs.) and 180 small tubes of 2 in. dia. (outs.), these being of Howell & Company's Aquacidox steel. The superheater tubes have an external diameter of 1½ in. The smokebox of the usual large size on Garratt boilers, is fitted with the Superheater Company's superheater, to which steam is admitted by an Owens type regulator. A conical spark arrestor is mounted on the blast pipe, and a hot water ash ejector is also provided. The smokebox door is secured by dogs. Referring to the general fittings of the firebox, two firebox inspection holes for examining the crown of the box are provided on each side. These can clearly be seen in the photograph.

The grate, which has a considerable slope, is fitted with steam-operated rocking firebars, and it may here be mentioned that the coal used is principally Natal, with an average calorific value of 13,000 B.T.U.'s. The ashpan is of the latest type applied to Garratt engines, and is self-cleaning through doors on the inside slope; it is also provided with side air admission doors, both of which are operated from the cab. Two blow-down cocks are located in the usual positions, and special attention has been paid to facilities for the washing out of the boiler and firebox. The safety valves are of the Ross "pop" type. The lagging of the boiler, firebox and dome is of the magnesia sectional type, from Dick's Asbestos Co. Ltd. The boiler and firebox clothing and belts, as also the clothing of the cylinders, are of planished steel. The boiler rests in the usual girder cradle which at each extremity is fitted with massive steel castings resting in pivots of the Beyer Peacock patent adjustable type, combined with side rollers of the latest pattern.

### Engine Unit Frames and Wheel Arrangement

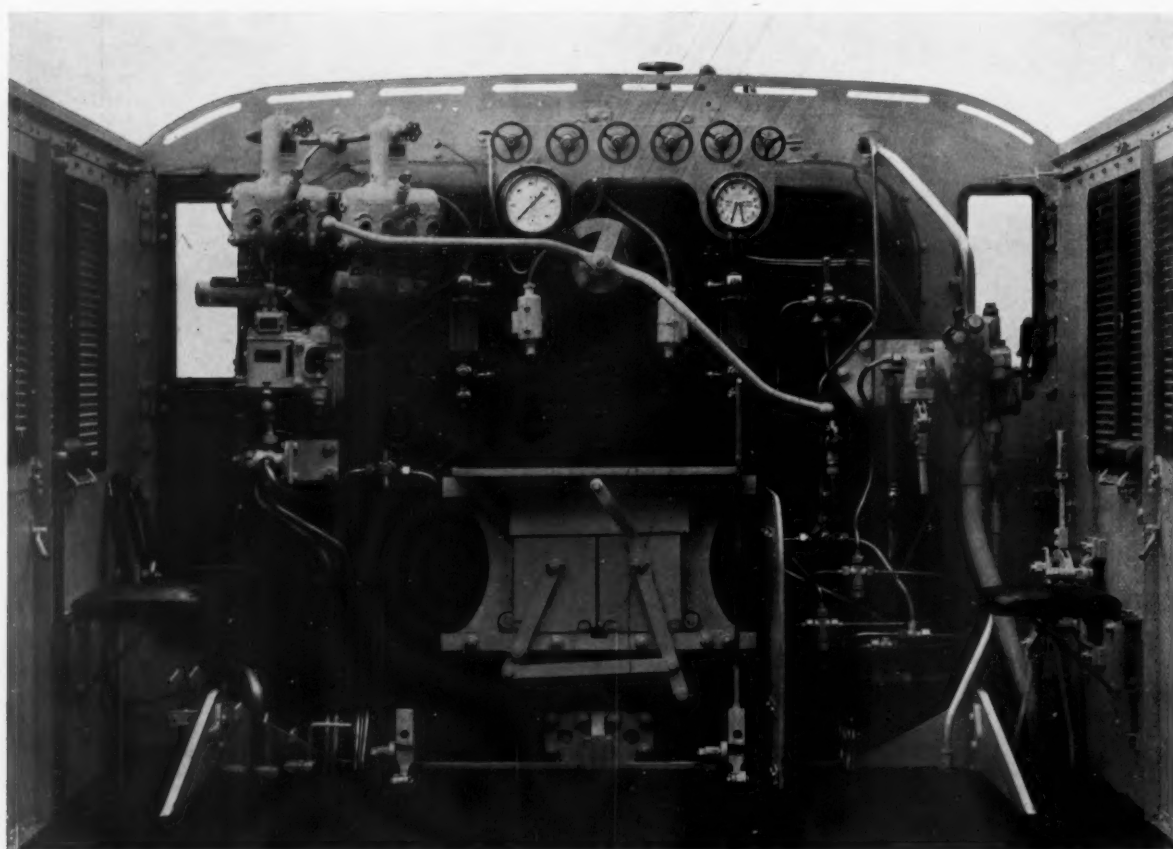
The engine unit frames are of bar frame construction machined from steel slabs, and are of exceptional strength and stayed throughout with steel castings. This, combined with the usual method of cylinder casting arrangement associated with bar frames, provides a chassis of adequate strength. The six-coupled wheels run in axleboxes of cast steel which are fitted with gunmetal bearings lined with Stones "C" white metal, dust shields, and bottom keeps of brass. The horn cheeks are fitted with liners and adjustable wedges. The tyres and axles are of Steel, Peech and Tozer's make, and the driving wheels are fitted with thin flanges. The four-wheel bogies have wheels of 2 ft. 9 in. dia., the inside two comprising one design, and the outside two another. The coupled wheels are compensated throughout, and also through to the inside four-wheel bogies. Overhung springs are used, following the general rule for bar frame construction. The coupled axleboxes are lubricated by a six-feed Wakefield mechanical lubricator on each unit, while two-feed lubricators of similar make, also one on each unit, lubricate the ball joints of the steam pipe. Ordinary syphon lubrication is arranged to the bogie axleboxes. Lambert's wet sanding is arranged to the front and rear of each group of coupled wheels. Cowcatchers, of steel construction, are provided at each end. The coupling arrangement, it







*Three-quarter view of locomotive showing front end arrangements*



*General view of cab showing well arranged controls and equipment and generous cab width*

4-6-4 + 4-6-4 BEYER-GARRATT LOCOMOTIVES FOR THE SUDAN RAILWAYS

will be noted, is of the pin and link type, made of Vibrax steel.

### Cylinders and Valve Gear

The cylinders, placed horizontally, are of cast iron, bolted together on the centre line of the engine, and are fitted with renewable cast iron liners, and by-pass valves. The piston valves, actuated by Walschaert motion, are arranged for inside admission, and have a travel of  $6\frac{1}{2}$  in. The cylinder cocks are operated by Servo-motor. The crosshead is of the Laird type, and of special design in accordance with the maker's latest practice. Slide bar lubrication is by a three-feed oil box with dust felt protective wipers. The eccentric rods at the eccentric cranks are fitted with Skefko roller bearings. Lubrication to the cylinders is provided by two four-feed British Detroit sight feed lubricators, one lubricator going to the cylinders and the other to the steam pipe, at its junction with the steam chest. Piston rod packing is of the United Kingdom metallic packing type; and cylinders, steam chest, reversing cylinders and steam exhaust pipes are lagged with asbestos mattresses from J. W. Roberts Limited. The steam reversing gear is placed on the right hand side of the boiler cradle. This gear is also provided with a locking cylinder and incorporates certain improvements.

The big ends, it will be noted, are fitted with a solid bush, and are oil lubricated. Throughout the locomotive the steam pipe arrangement has certain new features, the exhaust pipe on the rear engine, for instance, being fitted with two ball joints to take care of the additional displacement of the chassis in relation to the boiler. The braking system comprises hand screw brake to the coupled wheels of the hind engine unit, and steam brake to all coupled wheels; the latter is operated, in conjunction with the vacuum brakes on the train, by a Super Dreadnought type ejector with a combined Graduable steam brake valve of the latest pattern. This steam brake valve is so arranged that the variation of vacuum train pipe pressure operates against a stored vacuum to control the admission and release of steam to and from the brake cylinders. A balanced steam valve ensures very sensitive response and accurate proportioning both in application and release.

### A.C.F.I. Feed Water Heater

The water shortage on certain sections of this railway has already been referred to, also the great distances from which coal has to be obtained. To effect a saving in this direction the locomotives have been fitted with a feed water heater of the A.C.F.I. type, manufactured by J. Stone & Co. Ltd. This equipment, known as Type 3M, is placed on the boiler, various joints and fittings being accordingly easy of access. Briefly, the equipment is on the Integral system, in which the outstanding feature is transference of heat from the exhaust steam to the feed water without loss. The feed pump, designed to use less than 3 per cent. of the total evaporation of the boiler, transfers the exhaust steam diverted from the blast pipe into the mixing chamber after passing through an oil separator. Here it comes into direct contact with the feed water pumped from the cold water cylinder, thereby raising the temperature. The feed water in the mixing chamber is subjected to the pressure of the exhaust steam, thus forcing it to the settling chamber, which is provided with an outlet vent for O and CO<sub>2</sub> gases. The heated water is then delivered by the hot water cylinder of the pump to the boiler. There are, of course, other details, of which space will not permit elaboration. The steam cylinder of the pump is lubricated by a mechanically operated lubricator from the cab, the action of which is

automatic, being controlled by the water pressure generated in the pump. One Gresham and Craven No. 10 self acting injector with No. 11 cone is also fitted, which delivers water to the boiler, as does the A.C.F.I., through top feed clack boxes.

### Cab Arrangements

In view of the climatic conditions in the Sudan, every attempt has been made to give as much room and ventilation as possible in the cab. Despite the 3-ft. 6-in. gauge, the width of the cab is no less than 9 ft. 6 in., the footplate having an area of approximately 75 sq. ft. The side windows are fitted with louvres, but no glass, as are also the doors with which the cab is provided, and which are made in two halves. The driver's position, it will be noted, is arranged for right-hand drive, and cushioned seats and elbow rests are fitted on each side. A fire shield is provided to protect the driver. The roof has two large skylights, as well as Monarch ventilators. The various controls are placed easy to hand.

A door is arranged on the left hand side of the firebox to permit access to the running board. The water gauge columns are asbestos packed. The electric lighting is of Stone & Company's latest pattern, and headlights are provided at each end as well as tail, side, cab and motion inspection lights, a very necessary installation on a line of this nature. The turbo-generator is placed on the top of the firebox. To reduce the heat still further in the cab, a steam turret is arranged outside on top of the firebox, from which the steam supply to the various fittings is taken. The valves communicating with it, placed above the gauges, are clearly marked. One of the locomotives is fitted with a Hasler speed recording instrument. The coal bunker is of the self-trimming type, and both the front and hind tanks are arranged with water filling holes. Two tool boxes one on each side, are located on the hind tank behind the bunker. The front tank is fitted with four access doors for removal of tubes. Other fittings are four traversing screw jacks, a centrally located safety chain below the buffer, and a ladder to the top of the firebox.

The general conditions on the Sudan Railways are, of course, favourable to big loads, and already freight trains of 1,200 tons are taken over the Atbara—Khartoum and certain other sections, and crossing loops are gradually being lengthened for this purpose. The present maximum loading from Port Sudan to Gebeit is 700 tons.

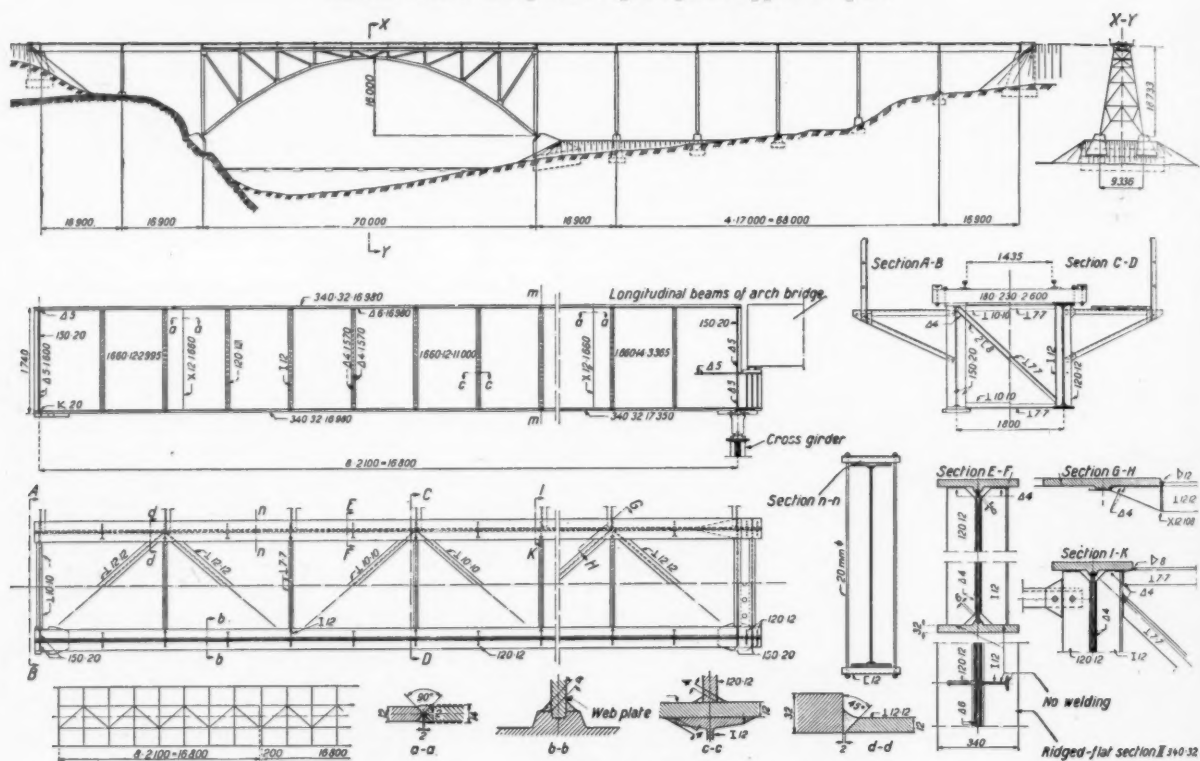
We understand from Mr. H. B. Emley, the General Manager, that when the Garratt locomotives are put into regular service, they are first to be used between Atbara, Khartoum, and Wad Medani, a distance of 300 miles, and Atbara and Port Sudan. The Khartoum—Wad Medani section, except for a small portion, is laid with 50-lb. rail. At present trains between Atbara and Wad Medani are worked by two engines, one engine working from Atbara to Khartoum, whence a second engine completes the journey. The Garratt engines will haul, it is hoped, something like a 1,500-ton load taking it right through, including the 50-lb. rail section. On the Red Sea line they will permit an appreciable increase of the loads of trains leaving Port Sudan for the interior.

The locomotives were shipped from Manchester in an assembled condition, with the boiler in the cradle and the front and hind engines as separate and more or less complete units. The first engine, which left Liverpool on January 1, and was off-loaded at Port Sudan on January 18 and 19, actually ran a 40-mile trial on January 24. The first two engines are already in Atbara, and a light train has been worked to Khartoum and back. At some later date we hope to make reference to the performance of these locomotives under the peculiar conditions obtaining in the Sudan.





*General view showing welded plate-girder approach spans*



*Elevation and section of bridge and details of welding*



*Welded plate-girder approach span at the manufacturers' works*

BRIDGE OVER RIVER NAMSEN, NORWEGIAN STATE RAILWAYS  
(See article at top of opposite page)

## Big Welded Railway Bridge in Norway

ON the new northern extension of the Norwegian State Railways, between Grong and Mosjøen, the line crosses the River Namsen on a single line steel viaduct having a main span over the river consisting of a three-hinged arch of 229 ft. 6 in. span of riveted construction. The approach spans, of which there are six at one end and two at the other, are of welded plate girder construction, each 55 ft. 9 in. long. The girders have the flange plates of ridged flat section, rolled in one piece for the full length and are welded to the web plates by continuous fillet welds. The web plates are spliced with X-weids.

The eight plate girder approach spans were completely welded at the works of the Vulkan Company at Oslo and transported the 480 miles to the site. Brackets and railings for footpaths on each side of the line were riveted in the field. The bridge was completed in 1935. Compared with riveted construction, these eight spans gave a saving in weight of about 20 per cent., and a saving in cost of 14 per cent.

In addition to this construction, five plate girder bridges of 36 ft. span have recently been completely welded for the Norwegian State Railways.



End view of welded plate-girder approach span (other illustrations opposite)



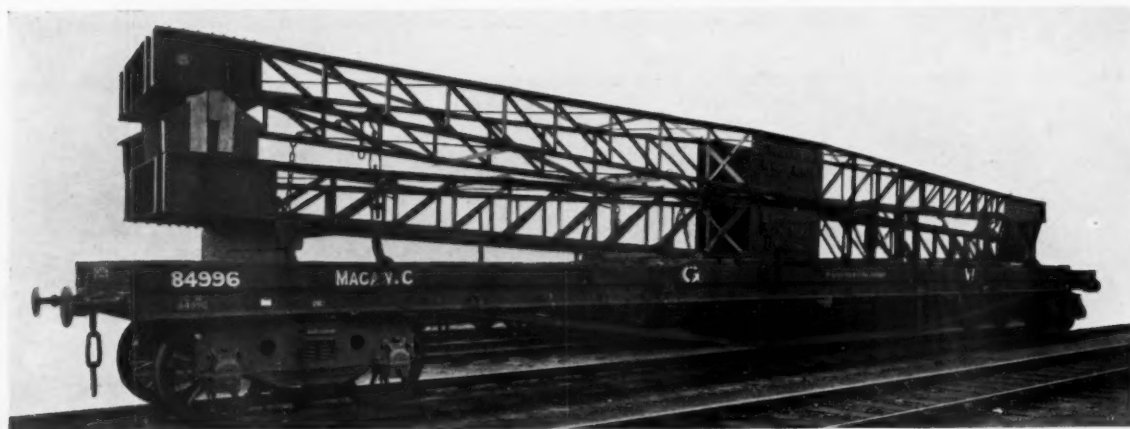
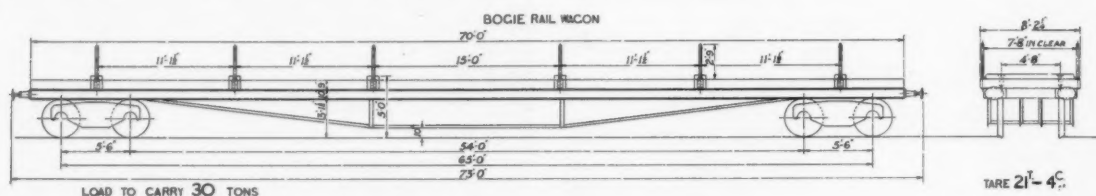
**THE SPANISH CONFLICT.**—Two views of railway conditions in Spain during the conflict. Above is an electric train prominently blazoned with the words "Union of the Proletariat against Fascism," and bearing the devices of the National Confederation of Labour (C.N.T.), the General Union of Workers (U.G.T.), and the Iberian Anarchist Federation (F.A.I.). The carriage on the left is standing in Oviedo station, after the bombardment

## G.W.R. Vehicles for Exceptional Loads—I

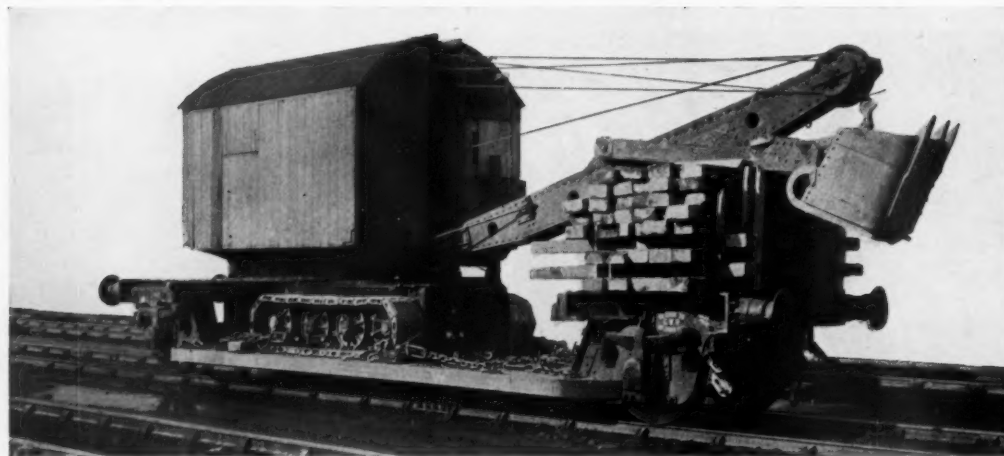
*A new series illustrating modern practice in meeting the increasing demands upon the railways for heavy transport*

Several Great Western Railway vehicles for special types of traffic were illustrated in the course of our recent series on British freight rolling stock, which appeared in the issues of THE RAILWAY GAZETTE for November 22, 1935, and January 10 and 24, 1936. We now publish examples of a further important class of special service

vehicle, namely, that designed to convey traffic of exceptional size and weight. As will be seen, the G.W.R. caters for loads of the most varied kind, and, on receiving details from the consignor, allocates the appropriate wagon for his goods, arranging special schedules for their transport when necessary.



*With its overall length of 73 ft., this bogie wagon is suitable for lengthy rails, timber, lattice girders, and similar loads*



*Excavators up to 20 tons in weight load neatly on to this four-wheel well-wagon, which is also suitable for steam rollers and traction engines weighing up to 15 tons*



## RAILWAY NEWS SECTION

### PERSONAL

Sir Ralph Wedgwood and the other members of his committee sailed from Bombay for England on February 19 on completion of their tour of inquiry in India. Their report will be finished in London.

From *The London Gazette* of February 19: Territorial Army; Royal Engineers; Engineer and Railway Staff Corps: Major R. J. M. Inglis, M.Inst.C.E., to be Lieutenant-Colonel (February 20). Lt.-Col. Inglis is Engineer, Southern Area, L.N.E.R.

Lt.-Colonel Sir Charles L. Morgan, C.B.E., has been elected President of the Retired Railway Officers' Society for the ensuing year; Mr. J. Procter-Smith, Hon. Treasurer; Mr. W. A. Thomas, Honorary Secretary; and Messrs. A. E. Dolden and J. W. Lovejoy, Honorary Auditors.

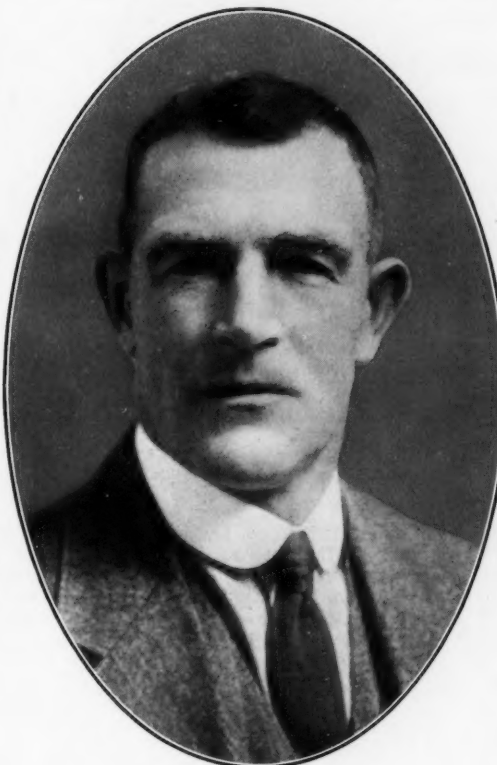
Vickers Limited announces that General The Hon. Sir Herbert A. Lawrence, G.C.B., has expressed his desire to be relieved of his duties as Chairman of the company from the conclusion of the forthcoming annual general meeting. Thereafter General Lawrence will retain his seat on the board for the time being. Mr. A. A. Jamieson will succeed Sir Herbert Lawrence as Chairman.

Mr. James McCrea, M.Inst.T., has resigned from the position of General Manager of the Northern Ireland Road Transport Board owing to ill-health. His retirement takes effect from May 15, after which date, however, his services will be at the disposal of the board in an advisory capacity. We published a portrait and biography of Mr. McCrea in our issue of September 13, 1935.

Mr. A. Morrison, F.I.S.A., A.M.Inst.T., has been appointed to succeed Mr. McCrea; he has been Assistant General Manager of the board since January of last year.

Mr. E. W. Rowntree, late Assistant Secretary in charge of the Secretarial Department of the Ministry of Transport, whose death we announced in our issue of December 25 last, left estate valued at £7,924 (£7,279 net).

Mr. John Miller, B.E., LL.D., M.Inst.C.E., who, as announced in *THE RAILWAY GAZETTE* of December 11, is retiring on February 27 from the position of Engineer, North Eastern Area, L.N.E.R., was born in Tyrone, Ulster, and educated first at Queen's College, Belfast, and afterwards at the Royal



Mr. J. Miller, B.E., LL.D.

Engineer, North Eastern Area, London and North Eastern Railway, 1925-1937

University of Ireland, Dublin. At the former he obtained scholarships in classics and mathematics, and, on the sports side, was Captain of the 1st XV, and middle-weight boxing champion; at the latter he obtained his degree of Bachelor of Engineering (Honours). After serving as Lecturer in Mathematics at the City and Guilds Engineering College, South Kensington, for some time, he joined the Pennsylvania Railroad, U.S.A., where he was engaged successively as Draughtsman, Inspector, and Assistant Engineer. While with the Pennsylvania Mr. Miller was responsible for the rebuilding of many bridges destroyed in the Ohio floods of 1913, the greatest in living memory up to that time, though exceeded by the recent floods that have

ravaged the same area. In 1916 he returned to this country to take up the position of Assistant Engineer, Great Eastern Railway, becoming Chief Assistant Engineer in 1917, and Chief Civil Engineer in 1918. Subsequent to the amalgamation in 1923, Mr. Miller held the position of Chief Civil Engineer, Great Eastern Section, L.N.E.R., until December 31, 1924, and on January 1, 1925, was appointed Engineer, North Eastern Area, L.N.E.R., the position from which he now retires. He is a Member of the Institution of Civil Engineers, was President of the Permanent Way Institution in 1920 and 1921, and Chairman of the Yorkshire Section of the Institution of Civil Engineers in the 1930-1931 session. The Honours degree of LL.D. of Queen's University, Belfast, was conferred upon him in 1922. Mr. Miller has always taken a keen interest in the social and athletic activities of the staff under him, and at various times served as Chairman of the Great Eastern Athletic Association and of the Liverpool Street Gymnastic and Boxing Club. Since his transfer to York he has been Chairman of Council of the York Railway Institute, and Chairman of the L.N.E.R. (N.E. Area) Athletic Association. In addition to his professional and athletic interests, he was for three years President of the Leeds and District Ulster Society, and has recently been elected President of the Queen's University Club, London.

We regret to announce the death, at the age of 80, of Mr. Charles Tufnell Dyne Burchell, Chairman of Beyer Peacock & Co. Ltd.

It is with regret that we have to record the death, on February 11, of Sir Miles Cecil Ives Partridge, K.B.E., sometime Manager of the former Central London Railway. After 12 years' experience in the offices of the General Manager, Superintendent of the Line, and Divisional Superintendent of the Great Western Railway, he was appointed Assistant Traffic Superintendent Central London Railway and in 1903 was promoted to be Traffic Superintendent. It was in 1911 that he became Manager, the position he vacated in 1914. During the war he was General Manager of the Metropolitan Munitions Committee, and was created a K.B.E. in 1917. He was the

co-inventor of the Bowden and Partidge fog signal economiser.

Mr. J. I. Campbell, who, as announced in THE RAILWAY GAZETTE of February 5, has been appointed District Engineer, Boston, L.N.E.R., began his training as an apprentice with the former Caledonian Railway in the District Engineer's Office, Perth, in 1907. Thereafter he became a junior assistant

neer on the construction of the Cooktown—Laura section of the Queensland Government Railways; he also built the bridge over the Laura River. Mr. Bell then held a managerial position in North Queensland, was appointed Chief Engineer in 1912, and in 1914 became Engineer-in-Chief of the Commonwealth Railways in charge of the Trans-Australian Railway construction. In addition, he was also appointed

he finished his apprenticeship. In 1905 he joined the Samana & Santiago Railway, Santo Domingo, as a mechanical engineer, remaining there until 1911. In 1912 he joined the technical staff of the Galena Signal Oil Co., in Argentina, but in August, 1914, he volunteered for active service, and was gazetted to a commission in the Highland Light Infantry. He was subsequently transferred to the Royal Engi-



**Mr. J. I. Campbell,**  
Appointed District Engineer, Boston,  
L.N.E.R.

in the District Engineer's Office, Edinburgh, and early in 1914 entered the Chief Engineer's Office of the North British Railway, as an assistant. During the war he was in the Army from 1914 to 1919, and served overseas in France, latterly holding a commission in the 111th and 260th companies, R.E. On demobilisation, Mr. Campbell returned to the N.B.R. New Works Department, where he remained after the amalgamation and until 1930, when he was appointed Chief Assistant to the District Engineer, Guide Bridge, L.N.E.R. It is from this position that he has now been promoted to be District Engineer, Boston, in succession to Mr. G. B. Barton, recently appointed Assistant to the Engineer (Maintenance) Southern Area. Mr. Campbell is an Associate Member of the Institution of Civil Engineers.

We regret to record the recent death of Mr. Norris G. Bell, C.B.E., first Commonwealth Railways Commissioner. He was born at Dundee in 1860, educated at the High School in that city, and at Edinburgh Collegiate School and University, and thereafter spent several years on railway construction works in Scotland. After further experience with a leading firm of consulting engineers in London, and as engineer to a firm of railway contractors, he went out to Queensland in 1886, and was appointed Resident Engi-



**The late Mr. Norris G. Bell, C.B.E.,**  
Australian Commonwealth Railways Commissioner,  
1917-29

Acting Commissioner, and on the completion of the construction, in 1917, was made Commissioner, the position from which he retired in 1929. Mr. Bell was also Chairman of the council that constructed the Kyogle—South Brisbane Railway, was one of the original members of the main committee of the Australian Standards Association; and he was also a Member of the Institution of Civil Engineers (London) as well as an Hon. Colonel in the Engineer and Railway Staff Corps. After many years' enthusiastic work for the Red Cross, he latterly acted as Chairman of the Victorian Central Depot Committee. Mr. Bell was made a C.B.E. for distinguished service to the Commonwealth in 1929.

We regret to announce the death, at the age of 63, of Mr. Henry Chappell, of Bath, the railway poet, whose best known work was the war-time poem "The Day." He resigned last summer after 45 years' service with the G.W.R.

Mr. Frank Campbell has been elected Chairman of the South American Centre of the Institution of Locomotive Engineers for 1937-38. Mr. Campbell was born in 1882, and entered the South Eastern and Chatham Railway works at Ashford as an engineering apprentice in 1898. In 1901 he transferred to the Glasgow & South Western Railway works at Kilmarnock, where



**Mr. Frank Campbell,**  
Elected Chairman, South American Centre, Institution  
of Locomotive Engineers, 1937-38

neers, in which he attained the rank of Major. Mr. Campbell returned to Argentina after the war and entered the firm of Evans, Thornton & Co., where he became a Director in charge of the Railway Department. He has now resigned his position with that company, in order to start in business for himself.

#### INDIAN RAILWAY STAFF CHANGES

Rai Bahadur D. N. Batra has been appointed to officiate as Deputy Chief Engineer, N.W.R., as from December 18, 1936.

Mr. A. H. Thackwell has been confirmed as Deputy Chief Mechanical Engineer, E.I.R., as from January 1.

Mr. H. H. Saunders, Deputy Chief Mechanical Engineer, E.I.R. has been permitted to retire from Government service as from January 1. He is at present with the Vulcan Foundry Limited, Newton-le-Willows.

Mr. E. R. Seshu Iyer has been appointed to officiate as Chief Accounts Officer, N.W.R., as from January 14.

Mr. P. G. Shah, Deputy Chief Accounts Officer, G.I.P.R., has been placed on special duty under the Controller of Railway Accounts, as from January 11.

Mr. H. Howe, Deputy Chief Engineer, has been appointed to officiate as Deputy Agent, E.I.R., as from January 5.

Mr. A. B. Turner has been confirmed as Deputy Chief Mechanical Engineer, E.I.R., as from January 10.

#### L.N.E.R. APPOINTMENTS

The London & North Eastern Railway announces the following appointments:—

Captain F. W. Corbet, Master in the Harwich Continental Services, to be Assistant to the Marine Superintendent, Parkeston Quay.

Mr. L. J. Moorcock, head of the rates and fares section of the Passenger Manager's Office, York, to be Assistant District Passenger Manager, London.

Mr. H. F. Pallant, Assistant to the Superintendent, Eastern Section, Southern Area, to be Assistant District Superintendent, Edinburgh.

We regret to hear that Mr. Ashley Brown, the General Secretary of the British Railway Stockholders' Union, has been advised by his doctor to take four months' complete rest. Mr. Ashley Brown will, we understand, hand over his post to a deputy at the latest towards the close of the month.

#### SOUTH AFRICAN STAFF CHANGES

Mr. C. W. Ballenden, System Engineer, Cape Town, has been appointed Inspecting Engineer on the staff of the Chief Civil Engineer at headquarters.

Mr. T. F. Bromley has been appointed to succeed Mr. Ballenden as System Engineer, Cape Town.

Mr. W. B. A. Ritchie, B.Sc., A.M.Inst.C.E., has been appointed System Engineer, Durban.

Mr. P. J. Louw has been appointed System Engineer, Port Elizabeth.

Mr. J. W. Wragge has been appointed Mechanical Engineer, Durban.

Mr. E. H. Wilson has been appointed Locomotive Superintendent, Cape Town.

Mr. Ballenden joined the service as a pupil draughtsman over 40 years ago, and has been employed mostly on survey and construction work all over the Union and South West Africa. He became an Assistant Engineer in 1909, District Engineer in 1920, and acting Assistant Superintendent, 1923. In 1931 he was promoted to be System Engineer, Kimberley. He has been System Engineer at Cape Town since July, 1935.

We regret to record the sudden death, on February 23, of Sir Henry Jackson, Bt., M.P., B.Sc., M.B. (Edin.), Chairman, since 1933, of the London and Home Counties Traffic Advisory Committee, and its representative on the board of appointing trustees, who, under section 1 of the London Passenger Transport Act, 1933, are charged with the duty of appointing the members of the London Passenger Transport Board. He was also Chairman of the Transport Committee of the Conservative Members of the House of Commons, and had been Chairman of the Standing Committee

on Mineral Transport since 1932. Born in Lancashire in 1875, Sir Henry was educated at Bury Grammar School and Cambridge, London and Edinburgh Universities, and took a double first in the Natural Science Tripos at Cambridge; he was also a Fellow of Downing College for 10 years. He was Mayor of Wandsworth, 1921-24, and, except during 1929-31, has been M.P. for Central Wandsworth since 1924.

G.W.R. SUPERINTENDENT OF THE LINE  
Sir Robert Horne, Chairman of the Great Western Railway, referred in his speech at the company's meeting on Wednesday (reported on page 386) to

the capable and zealous service of Mr. H. L. Wilkinson as Superintendent of the Line since 1933, a post he had to resign through ill health last July. He said the company was fortunate in having available such a competent successor to fill Mr. Wilkinson's place as Mr. F. R. Potter, who has spent the whole of his working life in the Traffic Department of the company.

Herr W. Kleinmann, Deputy General Manager of the German State Railway Company under the old régime, has been appointed Secretary to the Ministry of Transport under Dr. Dörpmüller.

## L.N.E.R. (King's Cross) Literary Society Smoking Concert

At the invitation of Mr. G. Sutherland, Chief Accountant, L.N.E.R., we were privileged to enjoy a most entertaining evening on Friday last at the King's Cross Literary Society's 45th annual smoking concert, held at the Queen's Hall; Mr. William Whitelaw, Chairman of the company, presided. A more attractive programme than ever was skilfully arranged and admirably carried out this year by the band of the Welsh Guards and an excellent company of musical and comedy artists. Among the guests present were:—

#### Representing the L.N.E.R.

Mr. William Whitelaw, Sir Murrugh Wilson and Lady Wilson, Sir Chas. Batho; Messrs. Andrew McCosh, J. McLaren, P. J. Dowsett, O. H. Corbie, G. Sutherland, R. Brown, C. J. Selway, G. Marshall, J. E. Ryan, R. J. M. Inglis, J. C. L. Train, P. Syder, F. Warriner, J. Lees, G. Sutcliffe, H. J. Birkbeck, R. R. Pettitt, S. A. V. Gregory, F. S. C. Stanley, H. S. Owen, J. F. Sparkie, and Mr. C. J. Selway.

Also present were:—Messrs. E. Taylor, Chief Accountant, L.M.S.R.; G. Morton, Asst. Accountant, L.M.S.R.; A. Howie, Joint Accountant, Southern Railway; A. E. Moore, Audit Accountant, Southern Railway; C. S. Louch, Comptroller and Accountant, L.P.T.B.; C. E. R. Sherrington, Railway Research Service; E. E. Painter, Secretary, Railway Clearing House; A. Feirn and J. Caldwell, Ministry of Transport; E. Huskisson, Thos. Cook & Sons; H. J. Jewell, B. & N. Line Royal Mail; L. V. Ceresole, Swiss Federal Railways; A. Mertz, Belgian State Railways; S. H. James, Pickfords Limited; and H. G. Dring, Canadian Pacific Railway. Also representatives of most of the important trading concerns connected with the L.N.E.R.

Mr. Whitelaw, before presenting the cups and shields for the various competitions organised by the society, welcomed the friends and traders who were their guests at the concert. He said he had no special message of any serious import this year, but mentioned that though the railway barometer was rising slightly, the weather was still a little chilly in the dividend department. He made some amusing allusions to the concert programme, which had a most attractive cover. He then presented the following trophies:—

Billiards League Championship Competition  
Division 1.—"Hill Dawe" Championship Cup, won by Mr. J. A. Lavelle, Chief Stores Superintendent's Office (for third year in succession). Mr. Lavelle is also the present

holder of the Railways Athletic Association Billiards Championship.

Division 2.—"Great Northern Officers' Cup," won by Mr. F. R. L. Parnwell, Engineer's Office.

Division 3.—"Warriner" Cup, won by Mr. T. Marsh, Funds Office.

#### Snooker Championship Competition

Division 1.—"Newton" Cup, won by Mr. R. L. Ormes, Engineer's Office.

Divisions 2 and 3.—There are at present no cups for the winners and suitable prizes are awarded. The winners were Mr. A. D. Brookes, Superintendent's Department, and Mr. W. Simpson, Registration Department.

#### Chess Section Championship Cup.

Won by Mr. S. W. Owers, Passenger Manager's Department.

#### Inter-Departmental Billiards Competition and Inter-Departmental Snooker Competition

Both these competitions were won by the "Other Departments" team, made up of members from various departments other than the Accountant's, Engineer's, and Goods Manager's, and captained by Mr. R. C. Methven, Funds Office.

Later on in the programme Mr. O. H. Corbie, Assistant to the Chief General Manager and Industrial Agent, in the unavoidable absence of Mr. Newton, Divisional General Manager, Southern Area, L.N.E.R., proposed a vote of thanks to the Chairman, which was responded to with the usual enthusiasm, and a most enjoyable evening closed with the singing of Auld Lang Syne.

#### AWARD FOR PAPERS ON ARC WELDING.

—The institution is announced from the U.S.A. of a \$200,000 award to be divided among 446 prizes for the best papers dealing with arc welding as a primary process of manufacture, fabrication, or construction in eleven major divisions of industry. This award, known as the James F. Lincoln Arc Welding Foundation, has been created by the Lincoln Electric Company, Cleveland, Ohio, U.S.A., which is affiliated with the Lincoln Electric Co. Ltd., of Welwyn Garden City, Herts. Entrants must submit their papers by June 1, 1938, and are recommended to communicate promptly with the Foundation Secretary, P.O. Box 5728, Cleveland, for full particulars of the awards and the classes under which papers may be entered.



## GREAT WESTERN RAILWAY COMPANY

*Dividend fully earned—Operating economies—Improvement in receipts  
—Rating relief—Better use of rolling stock—South Wales and the coal  
trade—Possibility of coal cartel—New works—Prospects for 1937*

The annual general meeting of the Great Western Railway Company was held at Paddington station on Wednesday, February 24, the Rt. Hon. Sir Robert Horne, G.B.E., K.C., M.P. (Chairman of the company), presiding.

The Secretary (Mr. F. R. E. Davis) read the notice convening the annual general meeting and the special general meeting.

The CHAIRMAN: Ladies and gentlemen, as this year will witness the Coronation of our gracious Sovereign King George VI, I am sure it would be the wish of this meeting that we should tender to His Majesty and his consort Queen Elizabeth our respectful feelings of loyalty and devotion—our hopes that their reign may be a long, happy and peaceful one, and that under their sovereignty the British people throughout the Empire may attain increased well-being and added strength.

As the day of the Coronation—May 12—is to be celebrated as a Bank and Public Holiday, we have had under consideration the question of leave arrangements for the staff, and we propose to grant members of the regular staff who can be released from their duties a day's holiday with pay. Those who must necessarily be at their posts on that day will be granted a day's holiday with pay on a subsequent day, or, if this is found impracticable, they will be given an additional day's pay as some consolation for being precluded from participating in the day of national rejoicing.

### Directorate and Staff

A few years ago you gave to your directors discretionary powers to fill vacancies on the board at such times as seemed appropriate to them, and we have recently elected to one of the vacancies Mr. A. W. Baldwin, a member of a family which has rendered distinguished service to the Great Western Railway Company. His grandfather, as you know, was Chairman of the company from 1905 to 1908, whilst his father, the present Prime Minister, was a member of the board for 9 years, till he resigned on becoming a Minister in the Government. Mr. A. W. Baldwin is a director of the Round Oak Works Limited and Redpath Brown & Co. Ltd.: he has the invaluable combination of experience and youth, and I am sure he will prove a useful addition to the board.

I regret to say that on account of ill-health Mr. H. L. Wilkinson, who was appointed Superintendent of the Line in 1933, and proved a most capable and zealous officer of the company, had to retire from the service in July last. He has been succeeded by Mr. F. R. Potter, who has spent the whole of his working life in the Traffic Department of the company, and I think we are fortunate in having available such a competent successor to fill Mr. Wilkinson's place. (Hear, hear.)

### Increased Receipts

I now come to the principal feature of our accounts for the past year, and as there are special comments which I desire to make in connection with some of the items, I do not propose to take them necessarily in the order in which they appear in the accounts. The expenditure of the further sum of £622,000 on capital account was due mainly to our five years' programme of new works to which I referred last year, but a substantial amount was also expended on additional rolling stock to enable us to meet the traffic requirements. A further investment of £183,000 has been made in associated passenger road transport companies. I may say here that the return on our investments in road transport companies as a whole again shows a satisfactory improvement, the yield for the past year being on the average  $7\frac{1}{2}$  per cent., which is  $\frac{1}{2}$  per cent. more than in the previous year.

Gross receipts from railway working rose by £991,126,

passenger train receipts accounting for an increase of £352,578, whilst goods trains and miscellaneous traffic receipts increased by £638,548. The general improvement which has taken place in our home trade is mainly responsible for these augmentations, but owing to the incidence of Leap Year we had also the benefit of an extra working day. Gross expenditure on railway working during 1936 increased by £54,080, but for comparative purposes allowance must be made for the overpayments in respect of rates and rate relief in 1935, pending the re-assessment of the company's undertaking as the outcome of our claim before the Courts.

### Economy in Operation

I am glad to say that this has now been settled subject to a few minor points which have still to be determined. The alteration of the basis of our liability for rates and rate relief resulted in a saving last year of £327,000. Leaving this out of account our expenditure would still have been only £381,000 in excess of the previous year. Irrespective of the saving in rate payments, therefore, our additional expenditure absorbed only 38.5 per cent. of the increased receipts. That after all is the significant figure of the year. I am sure you will agree that this is a highly satisfactory result, upon which our management and staff are to be congratulated, especially when you take into account that £85,000 of the increased expenditure was due to the decision of the Railway Staff National Tribunal in partially restoring, as from August 16 last, the cut in the salaries and wages of our employees which became effective in 1931.

The gross receipts from our dock undertaking show a decline of £61,762, due to a further diminution in the coal exports from South Wales. The net revenue amounted to £119,701, but had it not been for a reduction of approximately £120,000 in our liability in respect of rates and rate relief, there would have been a decrease of £47,000 in the net revenue as compared with the previous year. The net revenue from all sources amounted to £6,314,830, an increase of £864,271. Adding the balance brought forward from the previous year of £44,373 and deducting interest on loans, debentures and pre-ordinary stocks, there remains a balance of £1,364,686, available for dividend on ordinary stock. During the past five years we have experienced one of the worst periods of trade depression ever known in this country, and, although we have always been confident that trade would ultimately revive, the continued recourse to our free reserves in order to maintain dividends naturally caused us a great deal of anxiety, to which I gave pointed expression last year.

### Dividend Independent of Reserves

This year, for the first time since 1930, our earnings have been sufficient to cover the payment of a 3 per cent. dividend on the ordinary stock. Also to add to our carry-over, as I daresay you noticed from the accounts. For a continuous period of 67 years Great Western ordinary stock has received a dividend which has never been less than 3 per cent., but there have been several occasions during this period—apart from the last five years—when the result has only been possible through the cautious policy of building up reserves when opportunity offered. As I told you last year in a comprehensive review of the rating position, we anticipated that when the revised assessment of our undertaking for local rates was finally determined for the first quinquennium from 1931 to 1936, a substantial sum would be due to us in respect of overpayments exacted from us in rates and rate relief. The estimate of this amount for the period to December £31, 1935—that is to say, over the whole quinquennium—is £1,737,800, and as our free reserves have been reduced to £1,514,577 in connection with the

maintenance of the dividend at 3 per cent., we felt that the prudent and the proper course was to transfer this sum of £1,737,800 to the contingency fund, which now stands at £3,252,679—approximately the total of our free reserves six years ago.

There is only one other matter in the accounts upon which I wish to comment, and that is the large increase in the total assets and liabilities figuring in the balance sheet. This results from the arrangements made with His Majesty's Government for financing our programme of new works by borrowing—with the advantage of Government credit—up to £7½ million from the London Electric Transport Finance Corporation Limited and from the Railway Finance Corporation Limited. We have already borrowed approximately £5,500,000 from these corporations at an average rate of interest of about 2½ per cent., and our liabilities have, therefore, been increased accordingly. The works which we contemplate carrying out on capital account during the current year will require about £1,300,000, and in the meantime the borrowed money is included with our other investments on the assets side of the balance sheet.

#### Rating Assessments

I have already mentioned that the revised assessments for the year 1936 were adopted in compiling the accounts for the past year. The figures, however, which have been approved by the Railway Assessment Authority embrace not only the five year period to March 31, 1933—which had expired before the complicated issues were disposed of—but also the second quinquennium to March 31, 1941. The application of the broad principles settled by the House of Lords in the Southern Railway Company's case to the differing circumstances of each of the other main-line companies was by no means an easy matter, and this was appreciated by the representatives of all parties at the numerous conferences which took place in connection with the draft valuation rolls prepared by the Railway Assessment Authority. Ultimately, however, a compromise was effected, and under it the net annual value of the Great Western Railway Company's undertaking is fixed at £1,650,000 for the first quinquennium—and this gives you a measure of the extent of our overcharging in the past—as against £2,310,000 previously, and at £1,400,000 for the second quinquennium, which is based on the depressed years of 1930-1934, inclusive. In consequence of the revised assessments the annual amount available for rebates on traffic has been reduced considerably, and the Railway Freight Rebates Act, 1936, modifies the rebate provisions of the Local Government Act, 1929, so as to confine the rebates to milk and livestock, export coal, coke and patent fuel. This, as you will see, now excludes from benefit iron and steel; certain coal traffics not connected with the export trade; and certain agricultural traffics.

In dealing with rebates on docks-traffic a similar procedure has been adopted, and the benefit is now restricted to export coal, coke and patent fuel, and imported pitwood. Although the bulk of the railway traffic to which these rebates formerly applied was carried at exceptionally low rates, a certain amount of traffic in the higher grades also received rebates. The probable effect of reduction or withdrawal in these special cases has been reviewed and where the factor of road competition had to be met reductions in rates have been agreed, the cost of which offsets to a certain extent the benefit resulting from the smaller amount now payable by us to the rebates fund.

#### New Works

I will now deal briefly with our programme of new works which are being financed under the arrangement to which I have already referred. During the past year a number of minor schemes were completed and a great deal of preliminary work was done in connection with the programme of works to be carried out during the current year, involving, as I have said, an expenditure of about £1,300,000. Most of the schemes are to facilitate the working of traffic and effect economies in operation, and I shall mention one or two of the more important ones which are being undertaken for special reasons. I have referred on previous occasions to our

proposals for a by-pass line at Dawlish, for a new line from North Acton to Ruislip—which is part of the general scheme for improved facilities in the London Passenger Transport area; for a new line from St. Germans to Looe, and for the completion of the doubling of the Porthcawl branch. We hope to be in a position to let contracts for, at any rate, part of all these schemes during the current year. The new carriage storing sheds at Cherry Orchard and Swindon are to enable us to stable coaches under cover. A considerable portion of our coaching stock is not required in the winter months, and, under present conditions, has to stand in the open exposed to all weathers, which is obviously undesirable. We are also extending the carriage repair depots at Old Oak Common and Caerphilly with a view to improving the general maintenance of our coaching stock and saving light mileage at present incurred in sending vehicles to Swindon for repairs. The hotel at Paddington is being modernised, as many of you will probably have noticed, and we hope to begin the construction of our new hotel at Looe about the middle of the current year.

We require further Parliamentary powers for a deviation and a small extension of the new avoiding line at Dawlish which we find is desirable, and also for the continuation between Ruislip and Denham of the extension of the Ealing and Shepherds Bush Railway. These works, together with a number of minor matters, are included in a Bill which we have deposited in Parliament in the present Session, and it will be submitted formally to you for approval at the special or Wharncliffe meeting to follow this assembly, of which the usual statutory notice has been given.

#### Railway Unions' Claims

The negotiations which were taking place with the railway unions when I addressed you twelve months ago in connection with their claim for the abolition of the 2½ per cent. deduction from earnings and for other concessions failed to culminate in a settlement, and the matter was referred in July last to the Railway Staff National Tribunal, presided over by Sir Arthur Salter. The Associated Society of Locomotive Engineers and Firemen subsequently decided to make an independent application to the tribunal as they had formulated a claim which went considerably beyond the restoration of conditions previously enjoyed under their terms of employment. The decision of the tribunal in connection with the first application, which was promulgated on July 27 last, was that the deduction from earnings imposed in 1931 should be further reduced from 2½ per cent. to 1½ per cent., and that the standard rate of time and a quarter for overtime should be restored, the increases to be operative for a minimum period of twelve months from August, 1936.

In the case of the Associated Society of Locomotive Engineers and Firemen the tribunal found against the claim, but in doing so indicated that it would be open to the men to commence new negotiations when the annual accounts of the companies were available. The associated society have since advised the companies that their members are dissatisfied with the decisions of the tribunal, and in reply have been informed that the companies cannot depart from these findings. Discussions are, however, now taking place between the General Managers of the companies and the society's representatives, and, in the circumstances, I can only express the hope that a satisfactory understanding will be reached.

#### Traffic Figures

I will now deal with the operating side of our business. The passenger traffic figures are somewhat disappointing, the increase in the number of passengers carried (exclusive of season ticket holders) being only 328,000. The increase would have been considerably greater but for the depression in Monmouthshire and South Wales, as in these areas the number of passengers originating showed a decrease of over 1½ million over the previous year, whereas in all other districts there was an increase. That will show you, ladies and gentlemen, the effect on our fortunes of the state of affairs in South Wales. Our receipts from passengers improved to the extent of £282,000, which is attributable to

the development of long distance traffic and an increase in the number of first class passengers carried.

Receipts from parcels, mails and miscellaneous traffic increased by £70,000, which is satisfactory by comparison with 1935, as the lower charges which were in operation throughout 1936 only obtained for six months in the previous year. The earning of the additional passenger revenue of £352,000 involved the running of 1,300,000 more train miles, but this was done at a smaller percentage increase of cost than the percentage increase in receipts. The average speed of our passenger trains was higher than in any previous year, and the standard of punctuality was fully maintained. Developments during the year included the provision of two buffet cars of a new type; the introduction of nine more diesel railcars for services where the traffic is insufficient to justify the expense of running a steam train, and a special diesel car designed for the conveyance of parcels, which is an innovation in this country, and has already proved to be a great success. We are now experimenting with a diesel car capable of hauling a trailer, which, if successful, should enable us to effect economies in working some of our branch services. Other recent developments which are still expanding in popularity are holiday season tickets, circular tours, organised party traffic, and camp coaches, all of which have brought in additional revenue during the past year. We have also intensified our canvassing arrangements and recently appointed the first lady canvasser ever to be employed in this capacity on a railway; I am glad to say that the experiment is proving very successful.

#### Higher Freight Receipts

Turning now to our activities on the freight side, we conveyed during the year an additional 1,411,000 tons of general merchandise and mineral traffic, which created an increase in our receipts of £525,000. Although our coal carryings decreased by over a million tons our receipts from this class of traffic increased by £61,000. This is explained by the increase in the average length of haul. The improvement in merchandise traffic followed the greater measure of prosperity experienced by our domestic trade. The demand for iron and steel accounts for more than half the total increase in our carryings of goods, and this has to some extent—as yet small and scarcely as yet realised—been brought about by the re-armament policy of the Government. Other traffics which showed satisfactory increases were cement, limestone, oil-cake, and grain. The decline in coal traffic was entirely due to a further falling off in the export trade, to which I shall make reference later, but on the other hand there was a considerable increase in the inland trade, due partly to the recovery in the iron and steel industry. The longer haul of coal for inland consumption gave us an average receipt of 2s. 6·97d. per ton, a rise of over 1d. per ton, which accounts, as I have explained, for the increase in receipts. To earn the additional goods train revenue of £627,000 we had to run 989,000 more train miles, but our average train load was slightly higher than in the previous year, and the amount of shunting performed per hundred train miles was the lowest on record. The tonnage of traffic carted by the company's horses and motors was greater, and the cost per ton lower, than in any previous year, whilst the cost of handling traffic at our goods stations was also the lowest we have yet achieved.

As in the case of our passenger train traffic we have intensified our canvassing arrangements with beneficial results, and have been able to secure a considerable quantity of additional traffic by quoting special rates including delivery, instead of station to station rates as previously, and also by extending "agreed charge" arrangements.

Further economies have been effected in the use of rolling stock, and in recent years we have considerably reduced the number of locomotives, carriages and wagons in service. The more intensive use which we are now making of the vehicles available is illustrated by the increase in the average daily mileage run by the locomotives, which for last year was the highest on record. Some difficulty was occasionally experienced in meeting the wagon requirements owing to the large fluctuations in the daily loadings, which varied to the extent of no less than 4,600 wagons. In this connection I

may point out that whilst our road transport competitors are able to secure a fairly constant use for their vehicles, as they can compete for any of our traffic and carry only the most profitable, the railway companies have to carry any traffic which may be offered to them, and have thus to bear the expense of catering for the peak traffics.

#### Docks and Coal Exports

The volume of traffic dealt with at our docks during the year showed a further decline owing to continued difficulties in the markets in which South Wales competes. Coal exports through the Bristol Channel ports declined by 2,500,000 tons, reducing our total shipments abroad to 15,887,000 tons. This figure compares tragically with 28,795,000 tons shipped in the year 1929. Shipments to Italy in 1936 compared with the year 1935 declined by 1,559,000 tons; to Egypt by 471,000 tons; to Spain by 388,000 tons; and to Canada by 206,000 tons; and there were minor decreases in the shipments to a number of other countries. On the other hand, there was an improvement in exports to the Argentine and France of 137,000 and 210,000 tons respectively, and small increases to the Irish Free State, Brazil, Denmark and Sweden. The fall in coal exports from Monmouthshire and South Wales has been much greater than from any other exporting district in Great Britain. This is due to some extent to national policy, and in a considerable degree to foreign subsidised competition, from which South Wales is the chief sufferer. Unless some action is taken by the Government to enable the coal industry to meet this subsidised competition from foreign countries, there would seem to be little hope of regaining some of the lost markets.

It has been suggested to the Government that the problem could be solved by the creation of a cartel embracing all coal producing countries in Europe, but before such a cartel could be formed it is essential that the representatives of the industry responsible for negotiating the suggested cartel should be placed on a comparable footing with their foreign competitors. It is clearly the duty of the Government to take any practical steps to support a vital industry which may be in jeopardy through action taken by themselves in the national interest, or by foreign Governments. In our view, a declaration by the Government of its intention to obtain fair play for the coal industry in the competitive markets of the world, even if this involved granting a subsidy, would assist the industry to negotiate a cartel on lines equitable to this country. The loss of 206,000 tons in shipments of anthracite to Canada, which in that market has been displaced by supplies from Russia, is another serious blow to South Wales, and it is hoped that some means will be found in negotiations with Canada to regain this trade.

#### South Wales Trade

The net revenue of £119,000 from our dock undertaking last year was, as I have said, secured solely by reason of the long overdue reduction in our liability for rates and rate relief, and without it we should not have earned any profit whatever on the £21,000,000 invested in our docks. Everything possible has been done to effect diminutions in expenditure by reducing the number of appliances available for traffic, and by the temporary closing of Penarth Dock, a step which I need hardly say we took with great reluctance. We have now reached the limit to which expenditure can readily be reduced without impairing the efficiency of this part of our undertaking, and can only anxiously await the result of the Government's plans for the resuscitation of the Special Areas in the hope that they will include measures which will revive the export coal trade.

Last July I adopted a suggestion made in the press that I should call a conference of the leading industrialists in Monmouthshire and South Wales to consider measures for assisting trade in this important area in which we are mutually interested. The response from all quarters was most gratifying, and a full and frank exchange of views took place, as the result of which the most representative body of South Wales interests that has ever been brought together was formed, and designated the "South Wales Trade Recovery and Expansion Committee." The committee has presented three reports to the Government dealing with urgent matters



affecting the coal and shipping industries, and we are assured that the proposals put forward are having careful consideration by the Government.

The committee are also co-operating with the new Commissioner for Distressed Areas, the Special Areas Reconstruction Association Limited, and the Nuffield Trustees, in a joint effort to bring about the establishment of new industries in Monmouthshire and South Wales. In this connection, I should like to express our great appreciation of the public spirit displayed by Lord Nuffield in giving £2,000,000 to assist industries in the distressed areas. The prospect of South Wales sharing in this munificent gift enables us to look forward to possible important developments in the near future which we hope will have a marked effect on the unemployment problem in that area.

We are deeply indebted to our colleague, Lord Portal, who is keeping us in close touch with all these developments. He is Chairman of the Special Areas Reconstruction Association and a Trustee of the Nuffield Fund, and for some time past has devoted practically the whole of his time to the interests of the depressed areas. He is untiring in his efforts to bring about the establishment of new industries in South Wales and in the other Special Areas, and I am sure we all wish him the utmost success in the difficult task which, with such admirable public spirit, he has undertaken. The South Wales Recovery Committee also owes a debt of gratitude to our General Manager, Sir James Milne, whose resource and vision have been invaluable in dealing with the problems confronting us. (Applause.)

### Prospects

You will probably expect me to say a few words about the prospects for the current year. There are certain known factors in regard to expenditure which must be borne in mind. The increased cost resulting from the further partial restoration of the cut in salaries and wages was only felt during the last four and a half months of the past year, while this additional expenditure will now operate over the full twelve months of 1937. There will also be increased payments to a considerable number of the staff in the lower grades, whose wages have been increased as from January 1 last on account of the rise in the cost of living.

We have to face, too, additional expenditure in respect of coal, as all new contracts for locomotive coal are now being fixed on the basis of an extra 1s. per ton. Comparatively few of the contracts needed renewal last year, and the rising cost of coal did not, therefore, materially affect the 1936 accounts. There has also been an increase in the price of commodities generally, particularly railway sleepers, which are up by over 40 per cent. Moreover, iron and steel goods, of which we are very large consumers, have advanced in price.

### South Wales and the Government

On the revenue side, we must remember that there is one less working day than last year. We may assume, however, that our passenger traffic will benefit on account of the Coronation. As regards goods traffic, there is every indication of a further improvement in trade, and we should derive benefit from the proposals of the Government to establish certain armament factories on the company's system, the construction of which had either not commenced or had made insufficient progress to yield us much traffic last year. During 1936 seventy-three new firms established themselves on the company's system, from whose traffic we may expect to reap advantage in the current year. We may also look forward hopefully to the results of the efforts now being made to establish new industries in South Wales, and to the various measures which it is understood the Government have in contemplation for relieving the severe distress in that area. It is known that important proposals have been laid before the Government for the establishment of a large works in South Wales for the extraction of oil from coal, which would bring in its train the manufacture of many by-products. There is little doubt that development along these lines must eventually take place if Britain is not to lag woefully behind other industrial nations, and there is no place more suitable for such enterprises than South Wales.

Another proposal which is being considered by a committee under the auspices of the Mines Department is the question of greater use of coal in the Merchant Navy, and I trust that some steps may be taken in this direction. With regard to our dock undertaking, it is hoped to recover a considerable proportion of the million and a half tons in our shipments to Italy which we lost last year, and we also anticipate increased exports to France, to coaling depots abroad, and, in a minor degree, to the Argentine and Brazil. Our shipments of coal have been reduced to a very low level, and, while immediate prospects are undoubtedly better, there can be no assurance of any sustained recovery until action is taken by the Government to enable the coal export industry to compete on an equitable basis with foreign competitors.

In conclusion, I think you will all appreciate that, with so many varying factors, it is impossible to make any confident forecast as to the results of the coming year, but taking all circumstances into consideration, including the cost of working the additional traffic which we anticipate, I am hopeful that our net earnings will not fall below those of last year. I shall be only too pleased to answer as far as I am able any questions that you may desire to put to me after I have formally moved the following resolution: "That the Report of the Directors and Statement of Accounts for the year ended December 31, 1936, be received and adopted." I shall ask Lord Palmer to second that.

The RT. HON. LORD PALMER (Deputy-Chairman): I have much pleasure in seconding that.

The CHAIRMAN: Now, ladies and gentlemen, the opportunity for questions, comments, and—if there be any such—criticisms is afforded to you.

### Shareholders' Remarks

Mr. E. H. Greg asked a question on renewals of engines in the company's shops in Statistical Table No. XI. It was shown in that table that the number of renewals was 149, and the figure for renewals was given as £426,043, which seemed to mean only £2,860 per engine. He could not see that an engine could be built at Swindon for that sum.

The Chairman pointed out that the total expenditure on renewals covers work other than complete engines and that it was not correct to assume that it related only to the 149 new engines.

Mr. W. H. Robson said he was one of a family whose members between them had put in 1,500 years of active service in the locomotive department of the company. He himself had worked on the railway from 1884 to 1890 and he thought there should be no further increase of wages and salaries excepting the restoration of the 1½ per cent. of the last 5 per cent. cut, and no further improved working conditions of railway employees until the shareholders received their pre-war dividend. Before granting any subsidy to assist in recovering lost markets for the export coal trade, the Government should insist that only coal be used for fuel on the locomotives and steamers of all the railway companies in Great Britain. The best coal in the world was in South Wales, and in spite of the claims put forward for the use of oil as a fuel in this country, Welsh coal was economically superior and could be used on the railways, in the mercantile marine, in the Navy, and also in the power stations, with every satisfaction and also to the benefit of this country and its workers.

Mr. I. J. Anthony again referred to the canals, and claimed some of the credit for the reduction in expenditure upon them during the past year. He suggested that the company's Bill should include a clause empowering it to dispose of any obsolete canals. He also said that the deficit on collection and delivery for 1936 was £67,000 worse than for 1935. When this work was done by contractors they could make the work pay. Here he thought there was room for reorganisation.

Mr. W. H. Silcocks congratulated the company on obtaining sufficient earnings for the stockholders, without recourse to reserves. But there were now three forces against the company and its stockholders. The first was the road transport industry. The rail was unfortunately unsuccessful in its recent contest with the road, but he thought that the

appalling road slaughter should be stopped and the heavy traffic put back on the railways.

Mr. A. H. Phillips asked that the road transport people who brought goods from a distance should not be allowed to take them  $2\frac{1}{2}$  miles inside the docks after they arrived at the dock gates. This practice was also a danger to employees working in the docks. The company should convey the traffic inside and out.

Mr. Ashley Brown thought the statement made by the Chairman was quite convincing in regard to the enterprise and ability with which the company had been administered during the past twelve months. But looking ahead some stockholders had very serious misgivings on account of the demand which labour was getting into the habit of making on the companies at fairly regular intervals. Stockholders really wanted a friendly agreement with labour which should be binding on both parties, for a period of time. Regarding road transport, the Government might well be asked to consider whether the moment at which it was proposing to spend so many millions on armaments was really the moment at which to spend hundreds of millions of pounds on the widening of secondary roads to carry traffic which really had no business to be there.

Mr. Greg said there had been a move on the part of the Government to encourage the use of coal in steamships, and he believed also in the Navy. That was a matter going a great deal further than helping the coal industry. The country was getting perilously dependent on supplies of fuel which had to come overseas.

#### Chairman's Reply

The CHAIRMAN: Now, ladies and gentlemen, it seems that those are all the questions that members of the audience wish to put to me. I should like to deal with them *seriatim*.

In the first place, let me deal with the supplemental question put by Mr. Greg, viz.:—That one of the prime considerations of the Government ought to be that we are greatly advantaged in using coal here rather than depending upon supplies of oil from overseas, especially in connection with national defence. That, I personally know, is very much before the mind of Sir Thomas Inskip at the present time, and I also know that the whole question is being most thoroughly studied with a view to taking the best possible measures to safeguard our interests and the welfare of the country. Next may I just mention what Mr. Ashley Brown has so kindly said with regard to the management of the company. We are always glad to hear him as a representative of the railway stockholders and to consider anything that he has to put before us. The matter which he has mentioned, with regard to the spending of money on roads at the present time, when large loans are likely in future to be raised in connection with armament, is one which also is before the Government, and I shall take care that Mr. Hore-Belisha, the Minister of Transport, receives the suggestion which Mr. Ashley Brown has made today.

#### Road-Borne Traffic

Then with regard to road-borne traffic entering the docks, I understand the position to be that, speaking generally, persons carrying goods to the ships are entitled to convey them for delivery in their own vehicles; but probably we might have some restraining power if those vehicles were in a state in which they were dangerous. The position depends of course on the provisions in the Acts of Parliament regulating the particular docks.

Now Mr. Silcocks uttered a great many sentiments which were agreeable to the railway stockholders and I should be very glad to welcome Mr. Silcocks in the House of Commons where he could usefully give vent to these opinions. Whilst we shall try to command success in the matters which he mentioned, I am bound to indicate that they are not entirely within our control.

Mr. Anthony raised familiar questions again—canals and collection and delivery of goods. On the subject of the canals, I should like to think that Mr. Anthony was accurate in what he said in attributing to his own efforts at these meetings the diminution in the losses which we suffered upon the canals, but in fact I am obliged, in the cause of

accuracy, to say that the diminution in the losses on canals is due partly to an increase in revenue and partly to the benefit from the reduced rating assessment. We dislike the loss on these canals as much as he does, but the fact is this: that it would probably cost us more if these canals were shut down than it costs us to keep them in their present condition, for the reason, that we should in all likelihood be involved in heavy compensation payments to get relief from the obligations imposed on us by Parliament, when we became the owners.

#### Collection and Delivery

With regard to the collection and delivery of traffic, I think I have explained before at these meetings that the figure which is put as against that particular item in our account is an arbitrary figure. We have to make some sort of division between what is attributed to rail and what is attributed to the cartage in a composite rate, and we are satisfied that the arrangements now adopted are to the benefit of the company and preferable to any other system.

There is only one other thing that I have to mention, and that is with regard to Mr. Robson's remarks concerning the wages and salaries of railway employees. Now it is undoubtedly true that there has been a large increase in these wages, &c., during the last forty years, perhaps larger than in some other forms of employment. He does not, however, put forward any practical proposition, and you, ladies and gentlemen, know very well that the matter does not remain in our hands to settle. It is the Railway Staff National Tribunal which decides them. In the proceedings before that Tribunal we have not neglected to represent the interests and the position of stockholders, and you can certainly trust the directors to continue to do this.

#### Resolutions

I think I have dealt with all the points that have been raised, and now I put the resolution to the meeting. Will those who are in favour kindly signify? . . . Those against? . . . I declare the resolution carried unanimously.

I have now to propose:

"That dividends be paid for the half-year ended December 31, 1936, of £2 10s. per cent. on the consolidated guaranteed stock, £2 10s. per cent. on the consolidated preference stock, and £2 10s. per cent. on the 5 per cent. redeemable preference stock (1950).

That a dividend of £2 15s. per cent. for the same half-year be declared on the consolidated ordinary stock, making with the interim dividend of 5s. per cent. paid for the half-year ended June 30 last £3 per cent. for the year.

That such dividends be paid on and after the 2nd proximo to the proprietors who were registered in the books of the company when balances were struck on the 20th ultimo."

I beg to move that resolution. I will ask Lord Palmer to second that.

The Rt. Hon. Lord Palmer (Deputy-Chairman): I have much pleasure in seconding that.

The Chairman: I declare that carried unanimously.

I will ask Mr. Stevens to move the next resolution.

Mr. W. J. Stevens: Mr. Chairman, ladies and gentlemen, I beg to move: "That the following Directors now retiring by rotation be and they are hereby re-elected: Sir John Cadman, G.C.M.G., The Rt. Hon. Lord Davies, Mr. Harold Macmillan, M.P., The Rt. Hon. Lord Mildmay of Flete, The Rt. Hon. The Earl of Mount Edgumbe, and Sir H. L. Watkin Williams-Wynn, Bt., C.B."

Mr. D. Rupert Phillips: I have much pleasure in seconding that.

The Chairman: May I take it that the meeting agrees to that resolution? . . . I declare that resolution carried unanimously.

Mr. V. Vaughan: Mr. Chairman, ladies and gentlemen, I beg leave to move: "That the following gentlemen be and they are hereby appointed members of the Audit Committee for the ensuing year: Sir George Lewis Barstow, K.C.B., 36, Sussex Gardens, W.2; Sir W. Edgar Horne, Bt., 110, Mount Street, W.1; Mr. Reginald J. R. Loxdale, Castle Hill, Llanilar, Aberystwyth; Mr. D. Rupert Phillips, The

Greenway, Radyr, Glam.; and Mr. W. J. Stevens, Court Lodge, Merstham, Surrey."

Captain Newland: I beg to second that.

A shareholder: Might I ask what duties these gentlemen perform? I should like to know what duties they perform and what remuneration, if any, they receive, Sir. I think this is the only railway company which has such a committee.

The Chairman: May I answer the question which has been put to the meeting. These gentlemen examine on behalf of the stockholders the accounts of the company and recommend the appointment of the auditors, and they do it at no expense to the shareholders. (Hear, hear, and applause.) May I take it that the motion is carried? . . . I declare that the motion is carried unanimously.

#### SPECIAL GENERAL MEETING

The Chairman: Now I ask the meeting to resolve itself into a Wharnclyffe meeting, and I beg to propose: "That the Bill now submitted to the meeting entitled 'A Bill for conferring further powers upon the Great Western Railway in respect of their own undertaking and upon that company and the London Midland and Scottish Railway Company in respect of an undertaking in which they are jointly interested and upon the Great Western and Great Central Railways Joint Committee and for other purposes, be and the same

is hereby approved subject to such alterations therein as may be sanctioned by Parliament.'"

I will ask Lord Palmer to second that.

The Rt. Hon. Lord Palmer: I have pleasure in seconding that.

The Chairman: That is the resolution connected with the works which I described to the meeting in the course of my speech. May I take it the meeting agrees? . . . I declare the resolution carried unanimously.

Now, ladies and gentlemen, I am grateful to you for your attendance here today. It is always a great pleasure to myself and my colleagues to welcome the shareholders at these annual meetings, and may I thank you very much for the patience and courtesy with which you have listened to my address and for the support you uniformly give to your directors.

Mr. Leslie Boyce, M.P.: I think it would be the wish of all present that we should propose a very hearty vote of thanks to our Chairman and Directors and Management for the very efficient and satisfactory way they have looked after our interests for the past year, and to thank the Chairman for the very clear statement he has made and for the very fair way he has presided over this meeting.

The Chairman: Thank you very much, ladies and gentlemen.

## GREAT NORTHERN RAILWAY COMPANY (IRELAND)

### *Smaller freight traffic—Road service diesels— Popularity of hotels—Rising cost of materials*

The ordinary annual general meeting of the Great Northern Railway Company (Ireland) was held in the Gresham Hotel, Upper O'Connell Street, Dublin, on Wednesday, February 24, the Chairman, Mr. William Burton Carson, presiding.

The Secretary (Mr. F. C. Wallace) read the notice convening the meeting and the auditors' report.

The Chairman said: The Directors' report and statement of accounts have been in your hands for some time and with your consent I shall take them as read. I shall now deal with the principal items in the accounts which, taken as a whole, cannot, I think, be considered unsatisfactory, showing as they do an improvement in net earnings of £10,912, which enables the debenture interest and guaranteed dividend to be paid in full, leaving a small surplus of £1,448. The gross railway receipts increased by £25,945, or 2.40 per cent. To that amount passenger train traffic contributed an increase of £13,457, or 2.47 per cent., and goods train traffic, notwithstanding a large falling off in live stock receipts, £10,137 more, or 2.05 per cent., while the joint lines and miscellaneous receipts were up by £2,351, or 5.82 per cent. While the receipts from passenger traffic are up, the number carried (excluding season ticket holders) decreased by 189,323, or 3.55 per cent. This is mainly attributable to the fact that in the spring of 1935 we carried an abnormally large number of short distance passengers in the Dublin suburban area during the stoppage of the Dublin United Tramways Company's services.

#### Goods Train Traffic

The volume of merchandise traffic was less by 5,869 tons, or 1.13 per cent. While there was a considerable increase in the quantity of potatoes carried, there was a substantial reduction in the tonnage of flour and oil cake. In mineral (including coal) traffic there was a decrease in carryings of 36,395 tons, or 12.90 per cent. Of this, coal accounts for 24,066 tons, mainly due to increased use of electricity and the development of distribution by road. The falling off of 12,329 tons in other minerals is on account of reduced quantities of road making and building materials conveyed. In live stock there is the large reduction in receipts of £17,945, or 19.7 per cent. This is entirely due to the lesser number of cattle carried, equivalent to 25.6 per cent., arising from various causes. In sheep and pigs there was a sub-

stantial increase in numbers, but they were carried mostly for short distances.

#### Light Rail Units

Traffic expenditure, which amounted to £979,583, is £17,764, or 1.85 per cent. more than in 1935. Apart from increased cost of fuel, more money has had to be spent on the upkeep of the permanent way, signalling and rolling stock, a great deal of which is due to the necessity for overtaking some of the work which we were obliged to defer during the years prior to 1936. The two diesel railcar units to which I referred last year were put into service early last summer, and have so fulfilled our expectations as to economy working that we have ordered two further units of an improved type. Our railbuses continue to give satisfactory service and have fully justified the experiment. I am glad to say that the road motor services show a further improvement in net receipts. The vehicles are being maintained in first class working order and the policy of fitting diesel oil in place of petrol engines is being pursued with satisfactory results.

#### Good Results from Catering

The hotels, &c., department continues to show good results.

The net profit last year was £4,865, an increase of £1,274 over 1935. The popularity of our hotels at Bundoran and Rostrevor continues to increase, and the business at Greenore Hotel, which we have been working for the past three years, is steadily expanding, as the public are beginning to appreciate its comforts and amenities, and the moderate charges. I wish some of the shareholders would visit our hotels and see for themselves what excellent value we provide for our visitors. During the year we introduced the two buffet cars to which I referred at our last meeting. The results have been very satisfactory and the service greatly appreciated by the travelling public.

Miscellaneous (net) receipts at £35,428 show a decrease of £3,519, or 9.04 per cent., which is mainly due to a reduction in the net income from investments.

We are continuing to build new third class carriages of the most modern type, and during the year six of these were put into service and are extremely popular.

The abnormally wet summer undoubtedly caused a great



diminution in our week-end and evening seaside traffic. This we endeavoured to counteract by running special excursions at very cheap fares and so called "mystery tours," both by rail and road, which seemed to attract the public and brought in some much needed revenue. With regard to the position in Northern Ireland under the Road Transport Act, as stated in the report the time for submitting the pooling scheme for the approval of the tribunal has had to be extended by the Minister. While the main principles of the scheme were agreed upon some months ago by the Road Board and the railway companies, the work involved in working out the necessary details has proved very laborious, but both parties are busily engaged in getting out and checking the necessary figures.

#### Road Co-ordination Machinery

The Road Board has begun the work of acquiring the licences of the many hauliers. We are most anxious to carry on the principle of co-ordination as laid down by the Act, and lose no opportunity of urging the necessity of expediting the process. We fully appreciate the difficulties of the board's task, but we feel it is most important to all parties that the work should be completed as soon as possible, as our experience has shown that since the setting up of the Road Transport Board the competing road haulage services in Northern Ireland have engaged in more active competition with one another in an endeavour to justify their existence, with the result that traffic is at present being conveyed by road at rates which are wholly uneconomic. It would be out of the question for us to reduce our rates to meet this competition, as it would only result in our carrying the traffic at a loss. We desire to assist the Road Board in every way, as our interests are so closely connected. We are at present negotiating with them as to the provision of accommodation at our stations for their business. This should prove advantageous to both parties.

#### Increasing Expenditure

I shall now deal with the serious matter of increased, and still increasing expenditure. As you are all no doubt aware, there has been a considerable revival in industry in Great Britain, but this, unfortunately, has had its reactions as it involves substantial advances in the prices of materials. While we endeavour to obtain our requirements, where possible, from home sources, there are certain materials which a railway must purchase elsewhere, and the increased cost of these will press more heavily on the company during the current year. Most commercial concerns can pass increased costs on to their customers, but, under existing conditions, it is most difficult for a railway to raise its rates and fares to cover rising expenditure. Rather has it to concentrate on increasing the volume of its traffic. In the

last contract for locomotive coal, entered into in the early part of 1936, we had to pay considerably higher prices than in 1935 as the result of which our fuel costs advanced by £4,426, a figure which, I regret to say, will be at least doubled in the current year.

In addition, we have been faced with increased expenditure under the head of social services. The Conditions of Employment Act (Irish Free State), 1936, which came into force on May 29, 1936, places an additional burden on the company estimated at £6,700 per annum, which comes on top of the increased contributions we now have to bear under the Irish Free State National Health and Unemployment Insurance and Widows' and Orphans' Pensions Acts, and which, as mentioned last year, cost us about £3,000 per annum. We are continually being pressed to give increases in the rates of pay of all the grades in our employment. In view of what I have just said and the results of the year's working, together with the decline in receipts for the past two months, I am sure you will agree that this is not the time when additional expenditure on the wages side could reasonably be expected.

While there appears to be an improvement in trade in the Free State and in Northern Ireland, this has so far proved to be of little benefit to the company. We continue to make every effort to bring before the public the cheap fares which we provide, and the attractions of the various districts which we serve.

#### Appeal to Shareholders and Staff

Many of our 9,500 shareholders live in the areas served by the company, and might I again appeal to them to continue to influence traffic in their respective districts to our services, passenger and goods, by rail and road? Our staff numbers about 5,000. Each member of that body, even though he may not be employed in the Traffic Department, can exercise some influence in the district in which he lives, and I would again ask all of them to come to the assistance of the company in this direction. By so doing, they, in conjunction with the shareholders, will mutually be helping one another. In pointing out this community of interest that exists between the proprietors and the staff I am not unmindful of the efforts put forth by both in the past in the attempt to resuscitate the affairs of the company, and once again permit me to express the board's appreciation of those loyal services so willingly rendered.

It has once again been gratifying to the Directors to have received a large number of proxies from Shareholders who are unable to be present at this meeting, and I should like to thank them for the support they have thereby given to the board.

I now beg to move the adoption of the report and accounts.

### Forthcoming Events

Feb. 26 (Fri.).—Institute of Transport (Manchester-Liverpool), at Central Library, Manchester, 6.30 p.m. "Legislation Affecting Public Safety in Relation Particularly to Road Passenger Transport," by Mr. J. Woodford.

Railway Students' Association (Edinburgh), at Gook Hall, St. Andrew Square, 7.30 p.m. "The Romance of the Post Office," by Mr. A. Moncrieff.

Mar. 1 (Mon.).—British Oxygen Co. Ltd. (Railway Service), at Lecture Hall, North Circular Road, London, N.W.2, 7.30 p.m. "Surface Hardening of Iron and Steel by the Scientific Use of the Blowpipe," by Mr. A. Shorter.

G.W.R. (Birmingham) Lecture and Debating Society, at Great Western Hotel, Snow Hill Station, 6.30 p.m. "Public Hearing of Messrs. Streets and Roads 'A' Licence Renewal Application, Opposed by A.B.C. Railway Company," by Members.

Mar. 2 (Tues.).—Federation of Railway Lecture and Debating Societies (N.E. Area), at York. "Port of London," by Mr. A. Wildey.

Institute of Transport (Bristol), at the University, 6 p.m. "Elements of the Law of Ocean Shipping," by Mr. R. Wansbrough.

Institute of Transport (Metropolitan Graduate), at Inst. of Electrical Engineers, Savoy Place, W.C.2, 6 p.m. "Organisation of the Omnibus Industry in Great Britain," by Mr. C. Klapper.

Institute of Automobile Engineers, at Royal Geographical Society, Exhibition Road, London, S.W.7, 7 p.m. Symposium of Papers dealing with Research in Relation to the Motor Vehicle.

Mar. 3 (Wed.).—Railway Students' Association (Edinburgh), at North British Station Hotel, 7 p.m. Annual Supper.

Mar. 4 (Thurs.).—G.W.R. (London) Lecture and Debating Society, in General Meeting Room, Paddington Station, W.2, 5.45 p.m. "Personnel and Goods Department Problems," by Mr. D. Blee.

Southern Railway (London) Lecture and Debating Society, at Chapter House, St. Thomas' Street, S.E.1, 5.45 p.m. "The Railways of the Isle of Wight," by Mr. A. Macleod.

Mar. 5 (Fri.).—Institute of Transport (Leeds), at Town Hall, 6.30 p.m. "Canals—Yesterday and Today," by Mr. G. Hatcher.

Mar. 6 (Sat.).—Permanent Way Institution (Manchester-Liverpool), at Liverpool, 3 p.m. "Concrete Practice," by Mr. J. Elliott.

Mar. 8 (Mon.).—Institute of Transport (London), at Inst. of Electrical Engineers, Savoy Place, W.C.2, 5.30 p.m. "Notes on Commercial and Operating aspects of Trolleybus Operation," by Mr. T. Thomas.

Institute of Welding (Tyneside), at Armstrong College, Newcastle, 7.30 p.m. "Welding of High Tensile, and some Alloy Steels," by Mr. H. Bull.

Permanent Way Institution (London), at Underground Railways Dining Club, Pelham Street, S.W.7. "The Evolution of Permanent Way," by Mr. Charles E. Lee.

Stephenson Locomotive Society (London), at London School of Economics, Houghton Street, W.C.2, 6.30 p.m. "Some Geographical Studies of Railways," by Mr. S. Beaver.

Stephenson Locomotive Society (Scottish), at Royal Technical College, George Street, Glasgow, 7.45 p.m. "The Mechanisation of Permanent Way Maintenance," by Mr. K. Reid.

## MERSEY RAILWAY COMPANY

*Traffic improvement maintained—Preparing for through running with the L.M.S.R.*

The ordinary general meeting of the Mersey Railway was held at Winchester House, Old Broad Street, London, E.C., on Thursday, February 25, Mr. John Waddell, Chairman of the company, presiding.

The Secretary (Mr. Joshua Shaw) read the notice convening the meeting and the auditor's report.

The Chairman, before moving the adoption of the report and accounts, explained that the accounts were signed by only one auditor, Lord Plender, because the company had lost by death Mr. Flack, who had been auditor for 12 years, discharging his duties in a way that commanded the entire confidence of the board.

Proceeding to move the resolution, the Chairman said that after making due provision for the renewal funds amounting to £6,000, the net revenue for the year was £89,050, as compared with £85,955 for 1935. Adding £2,090, brought forward from last year's account, the total was £91,139. After deducting interest on debenture stock, £56,143; the appropriation to general reserve, £1,000; and the dividend on the preference stock £19,472, making altogether £76,615, there remained a balance available for payment of dividend on the ordinary stock of £14,523 16s., as compared with £12,681 12s. 10d. for 1935, an increase of £1,842 3s. 2d. Of this sum it was recommended that £12,357 6s. be applied in payment of a dividend on the ordinary stock of  $\frac{3}{4}$  per cent., and that the balance of £2,166 10s. be carried forward to next year's account, as compared with £2,089 13s. 5d. for 1935.

The gross receipts from railway working for the year were £216,969, as compared with £211,512 for 1935, an increase of £5,457, or 2.58 per cent. Working expenditure was £127,597 as compared with £125,856 for 1935, an increase of £1,741 or 1.38 per cent., leaving net receipts at £89,373 as compared with £85,656 for 1935, an increase of £3,717. The train mileage during the year was 544,024, as compared with 541,815 miles run during 1935, an increase of 2,209 miles. The number of passenger journeys was 18,292,997, as compared with 17,577,632 for 1935, an increase of 715,365, or 4.07 per cent.

**Traffic Improvement**

The improvement in trade in 1936 had been reflected by increased traffic receipts during the period, and that position was being more than maintained. During the past year the first class ordinary fares were reduced from 50 per cent. to 25 per cent. over the third class and now the whole of the first class were on this basis, that is 25 per cent. over the corresponding third class fares. The reduction in the charge for first class travel had fulfilled expectations both from the point of view of revenue and more equal distribution of train loading.

At the last annual meeting it was stated that an application made to the Traffic Commissioners of the North Western Area by a motor omnibus company, for a licence to extend two of its stage carriage services from Birkenhead through the new tunnel (Queensway) to Liverpool, had been refused, and that an appeal against this refusal had been made to the Ministry of Transport and was then pending. This appeal was subsequently heard and was dismissed. Further applications for a stage carriage service through the tunnel were made in March last year and continued in October, this time by two motor omnibus companies, to link up a service between Chester and Birkenhead operated by one of the companies, with a service between Liverpool and Southport operated by the other company. After a public hearing the Traffic Commissioners refused to grant the licences applied for. The applicants lodged an appeal, which was now awaiting the decision of the Minister. Whatever might arise from the formation of the Merseyside transport co-ordination committee, shareholders could rest assured that every possible step would be taken to protect the interests of their undertaking.

In connection with the running of through trains between the Wirral Section of the L.M.S.R. and the Mersey Railway, the L.M.S.R. had proceeded with the work of laying conductor rails, modernising some of its stations, constructing electrical sub-stations and ordering new rolling stock, electrical plant, &c. Owing to the rush of orders in all industrial undertakings in this country, unforeseen delays in the delivery of the plant and material had occurred, but it was still hoped that the through service would be in operation before next winter.

Simultaneously, the work of carrying out a number of improvements on the Mersey Railway had been proceeding and was now almost completed. During the year the whole of the positive conductor rails had been moved from the position they occupied to the standard position since laid down by the Minister of Transport for new works. The work was begun on Saturday night, August 15, and completed on the night of September 8, without interruption to traffic. The rails were moved nearer to the running rails and re-fixed on new insulators at a lower level. A total length of about 12 miles, weighing approximately 1,000 tons, was so dealt with. This was one of the most difficult pieces of work to be carried out to adapt the railway for through running, and it was some satisfaction to know that it was carried out in such a speedy and satisfactory manner, and without affecting the travelling public. It was an operation which had never been previously attempted in this country whilst maintaining a regular service of electric trains. The corresponding alterations of the collector shoe gear on the trains had also been completed.

Two out of the four high-speed electric lifts at James Street station, Liverpool, had also been installed, the first being put into passenger service at the beginning of October and the second at the beginning of November. The work on the remaining lifts would shortly be completed. These new lifts ran at a speed of 400 ft. a minute and, when in full operation they would be able to move almost double the number of passengers the old lifts were able to deal with. These lifts had proved very popular with the travelling public.

The modernisation of the seating of the coaches, provided for upholstered seating throughout to replace the rattan seating in the first class coaches and the wooden seating in the third class coaches; and electric heaters, which were not necessary in the uniform temperature of the tunnel but which with trains running out in the open to New Brighton were vitally important, were being installed and would be completed shortly. The costs would be borne by the L.M.S.R. as a part of the works covered by the Railways (Agreement) Act, 1935. In dealing with the work necessary for electrification and through running, the amount of technical, practical, and detail work involved had been very considerable, and he would like to move a mark of appreciation for all that those concerned had done, and the weight they had thrown into bringing it about.

In view of the electrification of the Wirral Section of the L.M.S.R. and the increased train service which was envisaged, it had been decided to augment the electric supply from the company's power station by taking an auxiliary supply of electricity from the Birkenhead Corporation. To convert the alternating current supply of the Birkenhead Corporation to direct current for use on the railway, it would be necessary to install two 750-kW. rectifying sets with their necessary switchgear. The supply had been obtained on terms satisfactory to the company.

With regard to the prospects for 1937, from the present indications it would appear that trade conditions should continue to be good, and the general prosperity should be reflected by satisfactory traffic returns.

The report and accounts were then unanimously adopted, and the meeting closed with the election of Mr. Alexander D. Walker as an auditor in place of the late Mr. Flack.

## Rhodesia Railways Debenture Stock

By a resolution of the board of the Rhodesia Railways Limited on February 11 last, £23,925,000 of 4½ per cent. debenture stock was created, and on Tuesday and Wednesday of this week an issue was offered to the public of £21,750,000 at 98 per cent. The issue, which is to provide for the conversion and/or redemption of the outstanding debenture capital of the company and of the Mashonaland Railway Co. Ltd. (except the 3 per cent. guaranteed mortgage debentures of the Rhodesia Railways Limited, which, in so far as they are not converted, will be repaid out of an unsecured advance to be made by the British South Africa Company), had the approval of the Governments of Southern Rhodesia, Northern Rhodesia, and the Bechuanaland Protectorate and of the Railway Commission in terms of the relevant legislation of the three territories. The three Governments have been given the joint right to nominate a director on the board of the Rhodesia Railways Limited.

The prospectus issued on February 22 stated that the Rhodesia Railways Limited was incorporated on May 24, 1893, as the Bechuanaland Railway Co. Ltd., and that the name was changed to the Rhodesia Railways Limited on June 1, 1899. The railway system comprises 2,441 miles of track (including 923 miles to be taken over from the Mashonaland Railway Co. Ltd.) which are or will be owned by the Rhodesia Railways Limited. In addition, 267 further miles of track are operated by the Rhodesia Railways Limited, under working arrangements with the owners. Included in these 267 miles is the section in Portuguese East Africa from the Port of Beira to the Southern Rhodesian border which is owned by the Beira Railway Co. Ltd., subject to the right of the Portuguese Government to acquire the section in 1946 or at the end of every successive period of ten years. The entire system, including those 267 miles, extends from Vryburg in the Union of South Africa in the south, and from the Port of Beira in the east, through Southern and Northern Rhodesia up to the Katanga district of the Belgian Congo in the north. Under an agreement dated August 3, 1894, supplemented by (1) an agreement dated January 12, 1937, between the Government of the Union of South Africa, the Government of Southern Rhodesia, the Rhodesia Railways Limited, and the Mashonaland Railway Co. Ltd. and (2) an agreement contained in letters dated December 17 and 18, 1936, between the Dominions Office and the British South Africa Company, the Government of the Union of South Africa and the Administration of the Bechuanaland Protectorate have, on the expiry of 33½ years from January 12, 1937, the right of expropriation at cost of the

line from Vryburg to Palapye (357 miles).

A conference was held in Cape Town in May, 1934, between representatives of the Governments of Southern Rhodesia, Northern Rhodesia, and the Bechuanaland Protectorate, and the Rhodesia Railways Limited and the Mashonaland Railway Co. Ltd. at which an agreement was entered into which contemplated, *inter alia*, that the two railway companies during a period of five years from July 19, 1935, should arrange a conversion of their existing debentures in order to secure a lower annual charge for interest. The directors of both companies decided that as a first step towards this end it would be essential to amalgamate the two undertakings by the Rhodesia Railways Limited absorbing the undertaking of the Mashonaland Railway Co. Ltd. Notice has been given convening an extraordinary general meeting for March 31 next for the purpose of the voluntary winding-up of the Mashonaland Railway Co. Ltd. and holders of the necessary majority of shares have undertaken to vote in favour of the special resolution for such voluntary winding-up.

The following are the main provisions of the scheme, which was approved by the shareholders of both companies at extraordinary general meetings held on February 11 last:—

(1) That the share capital of the Rhodesia Railways Limited be increased from £8,000 to £500,000 by the creation of a further 492,000 shares of £1 each.

(2) That £342,000 of existing reserves of the Rhodesia Railways Limited be capitalised and applied to the payment in full of 342,000 shares of £1 each to be issued and allotted, credited as fully paid, to existing shareholders *pro rata* to their holdings.

(3) That the Rhodesia Railways Limited give the necessary six months' notice for redemption of its issued and outstanding debentures as follows:—

£1,831,800 5 per cent. first mortgage debentures at £105 per cent., plus accrued interest, on August 13, 1937.

£252,870 3 per cent. guaranteed mortgage debentures at £107 per cent., plus accrued interest, on August 14, 1937.

£3,996,333 4 per cent. guaranteed mortgage debentures at £107 per cent., plus accrued interest, on August 14, 1937.

(4) That the Mashonaland Railway Co. Ltd. sells its undertaking and assets to the Rhodesia Railways Limited in consideration of the latter company undertaking to discharge all liabilities of the former company and agreeing to allot, credited as fully paid, 150,000 shares of £1 each in the Rhodesia Railways Limited for distribution amongst the shareholders of the Mashonaland Railway Co. Ltd.

(5) That the Mashonaland Railway Co.

Ltd. be voluntarily wound up on March 13, 1937, for the purpose of amalgamation with the Rhodesia Railways Limited.

(6) That upon and in consequence of the voluntary winding-up of the Mashonaland Railway Co. Ltd., its issued and outstanding debentures, viz.: £1,795,100 5 per cent. first mortgage debentures, and £2,560,000 5 per cent. guaranteed mortgage debentures (1905), are to be repaid at £105 per cent., plus accrued interest, on March 31, 1937, and the joint issue of £10,000,000 Rhodesia and Mashonaland Railways 6 per cent. consolidated debentures is to be repaid at £101 per cent., plus accrued interest on March 31, 1937.

Holders of the 5 per cent. and 3 per cent. debentures of the Rhodesia Railways Limited mentioned in para. (3) of the scheme, and holders of the 5 per cent. debentures of the Mashonaland Railway Co. Ltd. and of the Rhodesia and Mashonaland Railways 6 per cent. debentures mentioned in para. (6) of the scheme were given the option to convert their holdings into the 4½ per cent. debenture stock now offered.

**RETIRED RAILWAY OFFICERS' SOCIETY REPORT.**—The report of this society for the year ended December 31 last states that membership reached the record figure of 136, an increase of six over the former record of 130 attained in the previous year. Seven monthly meetings were held, attracting an average attendance of 38. The summer outing—a visit to Southampton Docks and an inspection of the R.M.S. *Queen Mary*—was attended by 132 members, a larger number than has participated in this event before. Generous arrangements for the comfort of all were made by the Southern Railway, including transport each way by the Bournemouth Belle, luncheon on the company's cross-Channel steamer *Isle of Guernsey*, and tea at the New Docks. The society is also indebted to the goodwill of the Cunard White Star Line for the privilege of visiting the *Queen Mary*. Yet a third record was reached during the year—namely, an attendance of 123 at the society's autumn luncheon in London (reported in THE RAILWAY GAZETTE of November 13). A donation of £5 has been made to the King George V National Memorial Fund out of the funds of the Society.

**RAILWAY STUDENTS' ASSOCIATION ANNUAL CONVENTION.**—The annual convention of the Railway Students' Association of the London School of Economics is to be held this year at Edinburgh from May 3-5, under the presidency of Mr. William Whitelaw, Chairman, L.N.E.R. Among the papers to be read will be one by Mr. R. Gardiner (Superintendent, Southern Scottish Area, L.N.E.R.) on "Rail Transport in Scotland." A number of visits will be made, and the members of the association will be received by the Lord Provost. The headquarters of the convention will be the North British Hotel.



## Durban-Johannesburg Main Line Improvements

Never have the traffic demands upon the South African main lines been greater than at present, and on no other is there more urgent demand for increased capacity than on the Durban-Johannesburg trunk line. Already electrification has been completed practically throughout the portion of this line in Natal territory, and it was decided some years ago to electrify the Glencoe-Volksrust section also. But here the greatest advantage could be obtained only if the alignment was radically altered, and in consequence a heavy programme of regrading and deviations, also relaying and general improvement—that will cost nearly £1,000,000 before it is completed—is now in hand. The elimination of two reversing stations and numerous level crossings are among the principal objects of this great work.

On the section from Waschbank to Glencoe curves as sharp as 300-ft. radius are being replaced by a minimum radius of 1,000 ft., and the ruling gradient will be 1 in 50. Between Glencoe and Ingogo, except for three curves through stations, the minimum

curvature will be 1,500 ft. radius, and the ruling grade 1 in 60, so that nowhere on this section will speed be restricted to less than 45 m.p.h. From Ingogo to Volksrust it was hoped to adhere to this same ruling gradient, but it was found that six tunnels and other very costly works would be involved, and so 1 in 50 is the steepest grade to which the former steeper ruling gradients have been reduced, and the sharpest curve is now 719-ft. radius, permitting of 34 m.p.h. speeds.

Three heavy diversions are in hand between Uithoek and Glencoe and also a fourth to eliminate the reversal of northbound trains at the latter station. Between Glencoe and Ingogo 14 out of 15 diversions are already in use, and the remaining one will be by the end of March. Work between Langsnek tunnel and Volksrust is also virtually completed, including the relaying of this section with 96-lb. track. One of the most tedious works was the lowering of this tunnel by 12 in. to permit of greater clearance. It took 11 months working under traffic, during which time 13,000 trains passed with-

out a single mishap, but often it was impossible to work for long periods owing to the stifling smoke they produced.

Two of the most interesting works in this length were Ingogo and Inkwelo tunnels and some 50 ft. rock cuttings. Ingogo tunnel has given a lot of trouble, as the 700 ft. already driven have been mostly through boulders and clay; rock has, however, now been reached, and it is hoped that the remaining 1,100 ft. will be completed by next October. This tunnel is located entirely on a long 1,200-ft. rad. curve. Only 250 ft. out of the 1,300 ft. length of Inkwelo tunnel were through bad material, and boring is now just finished; the lining will take another month or so.

In all 38½ miles of new track will be provided, of which 20 miles have already been laid. Earthwork involved in cuttings and banks will total 2,500,000 cu. yd., some 1,600,000 cu. yd. having been completed to date; also 27,000 cu. yd., out of an aggregate of 30,000 cu. yd. concrete, have been used in bridges and culverts. A feature of the work has been its labourers' model villages, complete with schools, hospitals, and so forth.

## "Gipsy Love"

During last week the Great Western Railway (London) Operatic Society gave five performances of Franz Lehar's famous musical play "Gipsy Love." The first two, on February 16 and 17, were at the Park Theatre, Hanwell, and those on Thursday, Friday, and Saturday evenings at the New Scala Theatre, W. In the original version of the play, by A. M. Willner and Robert Bodanzky, the adventures of Ilona, the heroine, take place in a dream, but the English libretto by Basil Hood (which, of course, was that used by the G.W.R. players) avoids this difficulty and presents a straightforward narrative of the episodes of the adventures of Ilona (Miss Joyce Hewitt) when she spurns her soldier lover, Jonel (Mr. George Yorke), and runs away with the gipsy musician, Jozsi (Mr. Ernest Colvill).

The outstanding character is Ilona's father, Dragotin (a Roumanian noble), who was excellently portrayed by Mr. Jack Sealey—a veteran with some 40 years' of experience of the amateur theatre. He handled with easy skill the part made famous by W. H. Berry, and was adequately matched by Miss Geraldine Fisher, as his "opposite," the English widow, Lady Babby. Considerable credit is due to the Producer and Stage Manager, Mr. George H. Hemmen, and to the Honorary Musical Director, Mr. Charles Gardiner, for a well-balanced and pleasant production; incidentally, Mr. Hemmen wrote the words of Dragotin's final song, "Home Again," which provided a humorous and topical, if somewhat incongruous, finale.

The 12 principal characters, a chorus of 17 ladies and 15 men, eight dancers

(staged by Miss Peggy Eve), and sundry incidental characters, were all provided by the staff of the G.W.R. without outside or professional help, and even the producer is a clerk in the London Divisional Superintendent's Office. Miss Geraldine Fisher is an enquiry clerk at

the G.W.R. Bank office, and other members of the cast normally book seats, answer enquiries, arrange excursions or household removals, render accounts or cater for public requirements in the company's hotels and restaurant cars.

**INSTITUTION OF RAILWAY SIGNAL ENGINEERS.**—At the annual general meeting in London on February 24, the retiring President, Mr. W. S. Roberts, presented the awards for the best papers during the year to Messrs. R. S. Proud and P. A. Langley (1st prizes) and Messrs. Birchenbough and Wright (2nd—joint—prize), and the award for the students' prize essay to Mr. P. S. Bennett. Mr. H. M. Proud was elected President and Mr. G. H. Crook Vice-President, and the following members of Council: Messrs. J. Boot, F. L. Castle, F. J. Dutton, E. W. Hallam, F. Horler, W. R. Jones, H. H. Dyer, J. Holden Fraser, C. H. Hills, L. J. M. Knotts, P. Lomas, R. Falshaw Morkill, A. Moss, and H. F. D. Page. Mr. M. G. Tweedie was re-elected Honorary Secretary and Mr. T. S. Lascelles Honorary Treasurer, and Messrs. F. Edwards and J. C. Brunjes were appointed Honorary Auditors. The new President, Mr. H. M. Proud, delivered an address on "Power Signalling in Great Britain in the Twentieth Century," dealing with the development of design and the applications of various types of apparatus to the constantly increasing requirements of modern traffic, illustrated by an instructive series of slides; he has been intimately connected with most of the improvements he described. After the meeting Mr. R. S. Griffiths, Past-President, showed slides of places of

interest to be visited during the summer meeting cruise in September, to be made on the ms. *Derbyshire*. The next meeting will be on March 24, when a paper entitled "Running Signals" is to be presented by Mr. B. Wagenrieder.

**I.R.S.E. ANNUAL SUMMER MEETING, 1937.**—We are advised that the circulation to members of the Institution of Railway Signal Engineers of a programme which provided for a combined cruise and visits to certain Scandinavian capitals met with a very enthusiastic reception. The number of applications to join the party was so great that the accommodation originally secured was found to be inadequate, and the council has had to review the whole matter. It has now issued an amended programme to those members from whom applications had been received. This provides for accommodation on the 15,000-ton Bibby liner *Derbyshire*, carrying first-class passengers only and taking a different route. The date, namely, September 4 to 12, is one week later than that at first proposed. Many members have not yet replied to the original circular, and if any of these intend to participate in the proposed cruise they should secure from the Honorary Secretary a copy of the amended programme and apply immediately for accommodation.

## Institute of Transport Annual Dinner

The annual dinner and dance of the Institute of Transport was held at the Connaught Rooms, London, on Friday, February 19. The chair was occupied by the President, Sir Alfred Read, and among those present were:—

Sir Josiah Stamp, G.C.B., G.B.E., Chairman, London Midland & Scottish Railway (Past President); Mr. R. M. Holland-Martin, C.B., Chairman, Southern Railway; Mr. Roger T. Smith (Past President); Col. Sir Joseph Nall, D.S.O., T.D., D.L. (Past President); Sir Cyril Hurcomb, K.B.E., C.B. (Immediate Past President); Mr. T. Ormesher, President of the National Association of Furniture Warehousemen and Removers; Mr. G. Cole Deacon, Secretary, Railway Companies Association; Col. Arthur Jerrett, President of the Commercial Motor Users' Association; Lt.-Col. F. Rayner, D.S.O., President of the Canal Association; Mr. Ernest Bevin; Mr. W. Bruce Thomas, K.C.; Mr. A. R. Cooper (Member of Council), Chief Engineer, London Passenger Transport Board; Lt.-Col. P. M. Brooke-Hitching; Mr. C. Cooper (Member of Council); Mr. E. J. Missenden, Traffic Manager, Southern Railway; Mr. G. Ellison, Chief Engineer, Southern Railway; Mr. W. H. Gaunt, Transport Advisory Council; Mr. R. H. Hacker; Mr. A. E. Hammett (Member of Council), Deputy Commercial Assistant, Southern Railway; Mr. W. A. Jepson.

Admiral the Rt. Hon. The Earl of Cork and Orrery, G.C.B., G.C.V.O., after the loyal toasts had been proposed by the President, proposed the toast of "The Institute of Transport," and in so doing emphasised the importance of the institute in furthering the great work of controlling transport. His own line of life, he observed, had drawn him into only two branches of transport, one as the driver of a small car and as a pedestrian, and the other as being connected with the question of transport from the angle of national defence. The Minister of Transport, he said, had pointed out that roads, like plants, took time to grow, and that it was the coming generation that would benefit by our endeavours. That was no doubt true, but plants could be speeded up by forcing and, in the prevailing uncertainty, who knew what conditions even more serious than in 1914 might not occur, so that the roads would have to stand an immense strain?

Many of those present that night were aware of the address given by the leader of the Labour Party to the British Railway Stockholders' Union. Mr. Attlee described very clearly what his party intended to do when it came into power. All forms of transport were to be taken over by the Government. Whether the Labour Government could, when in power, pass such a measure would depend very largely upon the feeling of the people towards the transport facilities given them at the time.

In this connection he was convinced that the disaffection among various branches of the transport industry, such as litigation between railways and transport companies, or the manipulation of rates to stifle competition by coastal shipping, caused a tendency for the ordinary man to say "why does not the Government take over the

necessary transport and run it in the national interest?" Co-operation and co-ordination, and not competition, was what people looked for today and what he understood the Institute of Transport was endeavouring to bring about.

Continuing, his Lordship said that at the present time we were hearing much of the possibility of war, and more people than ever considered the internal transport problem in its relation to national defence. What was wanted really was to amplify and extend all forms of transport facilities for expansion and not restriction. Under certain conditions, owing to the recent developments in aircraft, the internal transport system of this country might have to withstand the first shock of war. Our centres of industry and our big ports were open to aerial bombardment.

Alternative routes by which supplies could be distributed would have to be developed and, as an alternative, there was coastal shipment. It was our oldest system of distribution, and the more shallow-draught vessels we had working on our coasts the safer we could feel. The Government of an island power seemed to overlook the value of the small ports as alternative distributive centres, and we wanted, literally, hundreds of these coastal vessels to form an alternative method of distribution from our larger ports to our factories and people, quite apart from the other calls which might be

made upon them for national service. Sir Alfred Read, in replying, said that as they were there as a large gathering to enjoy themselves, he would not speak at any great length, but they would all agree with him that without transport, none would be able to live. Therefore, the Institute of Transport represented the most important institute in the world. The problems of transport had grown to a marked degree in the last few years, and he felt confident that in time they would cease to exist and those who were concerned with them, and those who had invested their money in the hope of a return, would be compelled to come closer together. That, he thought, would be all to the good, and he for one would welcome the day when the various branches of this great industry would be able to live in closer harmony together.

In conclusion, Sir Alfred paid a tribute to Mr. A. Winter Gray and his energy in carrying out the functions which fell to his lot as Secretary of the Institute. He never thought when he took over office that he would be expected to travel so much up and down the country and hear so many interesting papers as he had done. He thought the institute was doing a very useful and great work which would ensure that an adequate return would be made to those who had invested so much money in the transport business.

Sir Cyril Hurcomb, K.B.E., C.B., Immediate Past President of the Institute, proposed the toast of "The Guests," and Sir George Higgins, C.B.E., Chairman of Lloyd's Register of Shipping, replied.

## G.W.R. Ambulance and Educational Awards at Chester

In connection with the presentation of ambulance awards and educational certificates in the Chester Division, the annual dinner was held at Shrewsbury on February 15, when Mr. J. R. Morris, Divisional Superintendent, presided over a gathering of 150 officers, guests and members of the staff. He was supported by Mr. F. R. Potter, Superintendent of the Line; Mr. R. H. Grey, Divisional Locomotive Superintendent, Wolverhampton; Mr. D. Blee, District Goods Manager, Shrewsbury; Mr. G. Cornish, District Goods Manager, Liverpool; Mr. J. W. Enser, District Traffic Manager, Oswestry; Col. W. H. Hall, former District Goods Manager, Shrewsbury; Mr. T. Martin, former District Goods Manager, Liverpool; and Dr. F. H. Edwards of Shrewsbury.

Mr. Morris spoke of the satisfactory progress made by the ambulance movement in the Chester Division, 473 members having gained awards last session, of whom 43 were recruits. The percentage of qualified men in the Chester Traffic Department was 22. In the signalling classes, of 24 students who had taken the examination, 22 had

passed, two of them with merit. Mr. Potter referred to the excellent work carried out by members of the St. John Ambulance Association in the Chester Division, and took the opportunity of congratulating Mr. J. R. Morris on his recent admission to the Order of St. John of Jerusalem. He also stressed the value of the company's educational classes, and emphasised the importance of gaining also a sound practical knowledge of all phases of working.

Mr. Potter then presented ambulance awards to members of the numerous classes in the division, including a large number of efficiency awards for 15, 20, 25, and 30 years' service, and two competition trophies gained by the Chester class, the "Dr. Lees" and "Dr. Harrison" challenge cups. The educational certificates distributed by Mr. Potter included certificates gained in connection with the signalling, station accountancy and railway salesmanship courses. Mr. D. Blee, on behalf of members of the Shrewsbury class, made a presentation of an attache case to its secretary, Mr. Campion. During the evening an enjoyable musical entertainment was provided.

## STAFF AND LABOUR MATTERS

### Road Transport Wages

The committee appointed by the Ministers of Labour and Transport to consider the question of the regulation of wages and conditions of employment in the road transport industry (goods) met again in London on Thursday, February 18. A supplementary memorandum of evidence was submitted by the National Joint Conciliation Board. The board felt that certain matters which came under review at the first hearing could, with advantage, be clarified, and that certain submissions made at later hearings by other parties require correction.

The memorandum dealt at some length with the problem of the district regulation of wages, and it was submitted that the national board acted correctly in fixing grades and leaving the local area boards to decide which grade should apply to each district. It was claimed that by this method the advantages of uniformity were combined with a large measure of autonomy. The extent to which existing agreements were taken into account by the national board in reaching its decisions was also fully explained, it being stated that, in general, the process was one of continuing the existing scales with certain adjustments necessitated by the need for a measure of uniformity.

The national board commented on the argument advanced at an earlier hearing by Mr. Sewill that haulage rates must be fixed before wages. "It is, of course, perfectly obvious that haulage rates could not be fixed in ignorance of a major item of cost (*i.e.*, wages), but in any case Parliament has decreed that fair wages shall be paid, and wage rates must therefore be settled at once. The question of haulage rates is closely related and in fact forms an integral part of the subject of co-ordination of transport and this is a matter which is receiving the attention of the Transport Advisory Council. It is public knowledge that interested organisations, including the three National Road Transport Employers' Organisations, have been invited to submit their views on the subject." On this point the Chairman, Sir James Baillie, was understood to say that it seemed to him that if wages depended upon rates then wages would suffer.

The problem of competition was also touched upon, it being contended that "competition as it exists today is uneconomic in that the contractor who is operating on a sound economic basis has to face the competition of operators who quote lower rates at the expense of their employees' wages. When wages are regularised, competition will remain, but free from this undesirable feature."

In oral evidence, Mr. Ernest Bevin, General Secretary of the Transport and General Workers' Union, speaking with

Mr. W. Edwards, the employers' representative, on behalf of the national board, put forward some interesting proposals for a solution of the difficulty regarding wages of employees of "C" licence holders. It was recommended that a general order should be made to apply to the whole of the transport industry, but well organised trades which object to Governmental control of wages and conditions should be able to secure exemption from the order by making representations jointly with the employees' representatives. A necessary provision would be that the conditions laid down for transport men were no less favourable than those laid down by the Conciliation Board, but conditions could, of course, be adapted to suit individual industries' needs. Alternatively, it was suggested that having dealt with the main body of road transport employees,

it should be possible to ascertain the regulations for exemption that could not be dealt with by collective agreement.

It is understood that the Government Committee is unlikely to sit again in public.

### The Coronation Holiday

Some 560,000 employees will benefit from the important concession announced this week by the four main-line railway companies. As many as practicable of the regular staff will be given a day's leave, with pay, on Coronation Day, Wednesday, May 12; the payment will be at ordinary time or day rates. It will, however, be appreciated that, in view of public requirements, it will not be practicable to release all staff from duty on that day. Those who cannot be liberated on May 12 will be paid for work performed on that day as for an ordinary weekday, but will be given an additional day's leave with pay on another day, or, if this cannot be arranged, an additional day's pay at ordinary rates.

## QUESTIONS IN PARLIAMENT

### Railway Employees

Mr. G. Ridley (Clay Cross—Lab.) on February 11 asked the Minister of Labour how many persons were employed in the railway industry in the week ended December 19, 1936.

Mr. Ernest Brown (Minister of Labour): Statistics of the total numbers employed by railway companies are compiled only in respect of March of each year, by the Ministry of Transport. The latest available return relates to the week ended March 7, 1936, when the total number employed by the railway companies of Great Britain (including persons employed by the Railway Clearing House, and in connection with the railways of the London Passenger Transport Board) was 585,611. This figure includes staff engaged in ancillary businesses such as railway workshops, hotels, docks, steamships, &c., and represents the number of staff receiving salaries or wages for the full week, combined with the equivalent number of full-time workers in cases where employees were paid for less than the complete week.

### Sunday Train Service Wanted

Mr. Goldie (Warrington—C.) asked the Minister of Transport whether he was aware that owing to the absence of a Sunday train service between Wigan and Irlam, great inconvenience was caused to workmen in the steel industry resident in the neighbourhood of Warrington, who were thereby deprived of the opportunity of undertaking work on Sundays, for which overtime wages were paid; and whether he would accordingly make representations to the L.M.S.R. with a view to the provision of such Sunday train service or, alternatively, grant per-

mission to the Lancashire United Transport Company to run motorbuses for the conveyance of such workmen.

Mr. Hore-Belisha (Minister of Transport), in a written reply, stated: I have taken up this matter with the L.N.E.R., which proved to be the company actually concerned. That company informs me that it did not receive the information necessary to enable it to decide what additional train service was required until January 30, when it at once made arrangements to introduce a suitable additional service as from Sunday, February 7. I trust that this will remove all inconvenience to the workmen concerned.

### Deaths on Electrified Lines

Mr. Michael Beaumont (Aylesbury—U.) on February 22 asked the Minister of Transport how many deaths from electrocution occurred on the lines of electrified railways in 1936 to civilians, to children, and to people employed on the lines, respectively.

Captain Austin Hudson (Parliamentary Secretary to the Ministry of Transport): Two railway employees, eleven children, and two other persons, of whom twelve were trespassers, lost their lives in this way. Of the two railway employees, one was killed through contact with an overhead conductor cable.

### Nationalisation

Mr. H. Day (Southwark, Central—Lab.) on February 22 asked the Minister of Transport when the Government proposed to introduce legislation for the purpose of nationalising the principal means of transport in Great Britain.

Captain Austin Hudson: There is no such intention.



## NOTES AND NEWS

**Retired Railway Officers' Society Luncheon.**—The spring luncheon will be held on Tuesday, March 16, in the Middlesex Suite, Great Eastern Hotel, Liverpool Street, London, E.C.2. The principal guest will be Sir Francis I. E. Joseph, K.B.E., D.L., a Director of the London Midland & Scottish Railway Company.

**L.N.E.R. Express Derailment near Sleaford.**—A verdict of "accidental death" was returned at the resumed inquest at Sleaford (Lincs), on February 23, on the bodies of the four railway platelayers who were killed when an express train left the rails and crashed into a hut in which the men were seated.

**Lecture on Mobile Cranes.**—A lecture on petrol and diesel mobile cranes and steam breakdown cranes built in this country for British and foreign railways was given recently to the Locomotive and Carriage Institution of Great Britain by Mr. R. Crafter, of Ransomes & Rapier Limited. The lecture, held at the Science Museum, South Kensington, was illustrated with lantern slides and models, and attracted a large and enthusiastic audience.

**Institute of Transport Examinations.**—The final date for the receipt of applications to sit for the graduation and associate membership examinations of the Institute of Transport (which will be held on Thursday, Friday and Saturday, April 29 and 30 and May 1) is March 1 next. Forms of entry and copies of the examination regulations and syllabuses may be had on application to the Secretary of the institute, 15, Savoy Street, London, W.C.2.

**Increase in G.W.R. Irish Traffic.**—The Great Western Railway reports a considerable increase in the number of passengers carried to and from Ireland via Fishguard. In the first nine months of 1936, 121,067 passengers were carried, as compared with 82,822 during a similar period in 1933. The number of motorcars in the same periods rose from 1,400 in 1933 to 2,707 in 1936. Alterations to the steamers *St. Andrew* and *St. David* will facilitate the handling of motor traffic.

**Improved Tyneside Station Lighting.**—The L.N.E.R. announces that the station lighting on the electrified lines on the north side of the Tyne is to be improved. Benton station and the stations on the Riverside line have already been equipped with better lighting, and more powerful lights are now to be fitted at Jesmond, West Jesmond, South Gosforth, Backworth, West Monkseaton, Monkseaton, Whitley Bay, Cullercoats, Tynemouth, North Shields, Percy Main, Howdon, Wallsend, Heaton, and Walker Gate. Arrangements are being made for the improved lighting to be available next winter

when it is expected that the new passenger stock and accelerated services will be in operation.

**British Iron and Steel Federation.**—From Monday, March 1, the address of the British Iron and Steel Federation will be Steel House, Tothill Street, Westminster, S.W.1. The telephone number will be Whitehall 1030, and the telegraphic address will remain unaltered. The offices will be closed to-morrow (February 27) for the purposes of the move.

**Additional Railhead Depot for Norwich.**—An additional railhead store (a steel framed building, 188 ft. 9 in. long by 40 ft. wide, with a sheet metal exterior, giving a floor area of 844 sq. yd.) is to be built by the L.N.E.R. at Norwich Thorpe station to meet the demand for additional accommodation for storing merchandise. The building will be so arranged that extensions can be built as required.

**Swedish State Railways in 1936.**—The good results reported by the Swedish State Railways in respect of 1936 are surpassed only by the boom years 1929 and 1930. The surplus last year was 41 million kronor (£2,255,200 at par) against 32 million kronor for 1935. The interest on the money invested by the State amounts to 33.1 million kronor, leaving a net surplus of 7.9 million kronor, 2 million of which, however, is to be paid to the Grangesberg Company under the ore contract of that concern with the Swedish State.

**The Northern Ireland Road Transport Board.**—In a brief article on page 849 of our Road Transport Section for November 20 last, we pointed out that the policy of the Northern Ireland Road Transport Board regarding the acquisition of goods transport undertakings was to take them over by areas and not as isolated units. A further step in this direction is to be taken tomorrow (February 27), as notice has been given that the board will then acquire the businesses of 186 freight operators. These are working in a territory south of Belfast, in such places as Kilkeel, Warrenpoint, Rostrevor, Newry, Banbridge, and Lisburn. The transfers will give the board control of all the freight road transport in Co. Down and part of Armagh.

**Railway Club Annual Meeting.**—The Railway Club held its annual general meeting at the Royal Scottish Corporation Hall, Fetter Lane, E.C.4, on Thursday, February 18. At the conclusion of the formal business, Mr. Kenneth Brown read his presidential address, entitled "Railways in Law." Dealing with the liability in respect of goods carried, he referred to the three principal Acts of Parliament which set out the law on this intricate subject: first, the Carriers Act, 1830, which does not specifically mention railways; then the Railway and Canal Traffic Act,

1854; and lastly the Railways Act, 1921. Mr. Kenneth Brown then dealt with the liability to passengers, and the liability for passengers' luggage; also the liability of the railway company for the actions of its servants. A description of the leading case on this subject, *Bunch v. G.W.R.*, concluded a paper of exceptional interest.

**The East Anglian.**—The directors of the L.N.E.R. have decided to institute in the autumn a new express train between Norwich and London which will perform the journey in each direction in 2 hr. 15 min. including a stop at Ipswich. The train, which will be known as the East Anglian, will leave Norwich on Mondays to Fridays inclusive at 11.55 a.m., Ipswich 12.50 p.m., and arrive at Liverpool Street at 2.10 p.m. On the return journey the departure from Liverpool Street will be at 6.40 p.m., Ipswich 8.4 p.m., and the arrival at Norwich at 8.55 p.m. New rolling stock will be provided for the train, which will be hauled by a streamlined locomotive of the "Sandringham" class.

**Improvements to Luton Station, L.M.S.R.**—To meet rapidly increasing passenger and parcels traffic at Luton, the L.M.S. is to remodel its passenger station there at a cost of £47,600. An important feature of the scheme is the provision of a new high level booking-office with access from the public footbridge which crosses the station. A portion of this footbridge will be raised, and a portion also widened to 12 ft. The parcels office, waiting room accommodation, and station refreshment and dining rooms will all be enlarged and improved, while the island platform on the up side will be widened; all the platforms will also be raised to the standard height of 3 ft. Car parking facilities are also to be provided, and the loading-dock extended.

**Possible Tube for South-East London.**—For some time past the London Passenger Transport Board has been urged by the local authorities to extend the Bakerloo Line from the Elephant & Castle to Camberwell Green, for which powers have already been secured. A few days ago, the board sent a letter in the following terms to the Town Clerk of Camberwell, the Town Clerk of Southwark, the Chairman of the Camberwell, Peckham and Dulwich Chamber of Commerce, Colonel Day, M.P. for Southwark Central, and Mr. Silkin, M.P. for Peckham:—

I am directed to refer to the meeting which took place between the representatives of South London and Lord Ashfield on October 26 last, and to inform you that plans for the development of a tube railway in South London are now receiving very close attention by members of the Standing Joint Committee, which is composed of the representatives of the main-line railways and the board. Owing to the magnitude of the scheme, its consideration must of necessity take some time, and it is unlikely that any effective decision on the proposals will be reached by this committee before March at the earliest.

## British and Irish Traffic Returns

| GREAT BRITAIN                         | Totals for 7th Week |           |              | Totals to Date |            |              |
|---------------------------------------|---------------------|-----------|--------------|----------------|------------|--------------|
|                                       | 1937                | 1936      | Inc. or Dec. | 1937           | 1936       | Inc. or Dec. |
| L.M.S.R. (6,880½ mls.)                | £                   | £         | £            | £              | £          | £            |
| Passenger-train traffic...            | 394,000             | 379,000   | + 15,000     | 2,595,000      | 2,545,000  | + 50,000     |
| Merchandise, &c. ...                  | 495,000             | 470,000   | + 25,000     | 3,305,000      | 3,192,000  | + 113,000    |
| Coal and coke ...                     | 298,000             | 289,000   | + 9,000      | 2,022,000      | 2,060,000  | - 38,000     |
| Goods-train traffic ...               | 793,000             | 759,000   | + 34,000     | 5,327,000      | 5,252,000  | + 75,000     |
| Total receipts ...                    | 1,187,000           | 1,138,000 | + 49,000     | 7,922,000      | 7,797,000  | + 125,000    |
| L.N.E.R. (6,332 mls.)                 |                     |           |              |                |            |              |
| Passenger-train traffic...            | 258,000             | 255,000   | + 3,000      | 1,741,000      | 1,711,000  | + 30,000     |
| Merchandise, &c. ...                  | 326,000             | 317,000   | + 9,000      | 2,228,000      | 2,213,000  | + 15,000     |
| Coal and coke ...                     | 268,000             | 266,000   | + 2,000      | 1,839,000      | 1,908,000  | - 69,000     |
| Goods-train traffic ...               | 594,000             | 583,000   | + 11,000     | 4,067,000      | 4,121,000  | - 54,000     |
| Total receipts ...                    | 852,000             | 838,000   | + 14,000     | 5,808,000      | 5,832,000  | - 24,000     |
| G.W.R. (3,738½ mls.)                  |                     |           |              |                |            |              |
| Passenger-train traffic...            | 158,000             | 153,000   | + 5,000      | 1,088,000      | 1,077,000  | + 11,000     |
| Merchandise, &c. ...                  | 198,000             | 189,000   | + 9,000      | 1,314,000      | 1,272,000  | + 42,000     |
| Coal and coke ...                     | 119,000             | 113,000   | + 6,000      | 823,000        | 822,000    | + 1,000      |
| Goods-train traffic ...               | 317,000             | 302,000   | + 15,000     | 2,137,000      | 2,094,000  | + 43,000     |
| Total receipts ...                    | 475,000             | 455,000   | + 20,000     | 3,225,000      | 3,171,000  | + 54,000     |
| S.R. (2,153 mls.)                     |                     |           |              |                |            |              |
| Passenger-train traffic...            | 252,000             | 239,000   | + 13,000     | 1,738,000      | 1,666,000  | + 72,000     |
| Merchandise, &c. ...                  | 58,000              | 59,500    | - 1,500      | 386,000        | 402,500    | - 16,500     |
| Coal and coke ...                     | 37,000              | 40,500    | - 3,500      | 243,000        | 278,500    | - 35,500     |
| Goods-train traffic ...               | 95,000              | 100,000   | - 5,000      | 629,000        | 681,000    | - 52,000     |
| Total receipts ...                    | 347,000             | 339,000   | + 8,000      | 2,367,000      | 2,347,000  | + 20,000     |
| Liverpool Overhead ...                | 1,228               | 1,112     | + 116        | 8,337          | 8,051      | + 286        |
| Mersey (4½ mls.) ...                  | 4,142               | 3,990     | + 152        | 29,735         | 28,803     | + 932        |
| *London Passenger Transport Board ... | 561,100             | 533,800   | + 27,300     | 19,002,100     | 18,451,000 | + 551,100    |
| IRELAND                               |                     |           |              |                |            |              |
| †Belfast & C.D. pass. (80 mls.)       | 1,613               | 1,800     | - 187        | 11,881         | 13,085     | - 1,204      |
| " " goods                             | 572                 | 587       | - 15         | 3,305          | 3,886      | - 581        |
| " " total                             | 2,185               | 2,387     | - 202        | 15,186         | 16,971     | - 1,785      |
| Great Northern (543 mls.) pass.       | 6,950               | 7,300     | - 350        | 51,750         | 53,900     | - 2,150      |
| " " goods                             | 9,400               | 10,150    | - 750        | 62,300         | 68,500     | - 6,200      |
| " " total                             | 16,350              | 17,450    | - 1,100      | 114,050        | 122,400    | - 8,350      |
| Great Southern (2,075 mls.) pass.     | 25,524              | 25,955    | - 431        | 180,101        | 184,783    | - 4,682      |
| " " goods                             | 39,907              | 39,722    | + 185        | 290,489        | 287,252    | + 3,237      |
| " " total                             | 65,431              | 65,677    | - 246        | 470,590        | 472,035    | - 1,445      |

\* 34th week.

† 8th week.

## Railway and Other Reports

**London & North Eastern Railway.**—After transferring £50,000 from general reserve as formerly, the directors recommend that, subject to final audit, dividends be paid on the 4 per cent. first preference stock at the rate of 4 per cent.; on the 5 per cent. redeemable preference stock at the rate of 5 per cent.; and on the 4 per cent. second preference stock at the rate of 10s. per cent., in each case less income tax, leaving a balance of £66,425 to be carried forward. Credit to the amount of £755,000 has been taken in the accounts for 1936 in respect of the reduction of rates and rate relief attributable to the year. Warrants for the dividends on the above mentioned preference stocks will be posted on March 10.

**Vickers Limited.**—The directors give notice that the following final dividends for the half-year ended December 31, 1936, will be paid to holders registered on February 27, 1937:—2½ per cent., less income tax, on the preferred 5 per cent. stock; 2½ per cent., less income tax, on the 5 per cent. preference stock;

2½ per cent., free of income tax, on the cumulative preference stock. Payment will be made on Thursday, March 25.

**Pennsylvania Railroad.**—Gross operating revenues for the year 1936 were \$441,425,189, an increase of \$73,613,003 over 1935. The operating expenses of \$314,087,701 showed an advance of \$50,987,517. Net railway operating income amounted to \$84,180,592, an increase of \$13,785,951.

## Forthcoming Meetings

Feb. 26 (Fri.).—**London Midland & Scottish Railway Company** (Annual General), Friends House, Euston Road, N.W., at 11.30 a.m.

March 2 (Tues.).—**London Midland & Scottish Railway Company** (Wharnccliffe, followed by Special General), Euston Station, N.W.1, at noon.

March 5 (Fri.).—**London & North Eastern Railway Company** (Ordinary General, followed by Special General), Wharnccliffe Rooms, N.W.1, at 2 p.m.

March 5 (Fri.).—**Great Southern Railway Company** (Ordinary General), Gresham Hotel, Dublin, at 2 p.m.

## British and Irish Railways Stocks and Shares

| Stocks   | Highest<br>1936                  | Lowest<br>1936                   | Prices                            |                                |
|--|----------------------------------|----------------------------------|-----------------------------------|--------------------------------|
|  |                                  |                                  | Feb.<br>24,<br>1937               | Rise/<br>Fall                  |
| G.W.R.   |                                  |                                  |                                   |                                |
| Cons. Ord. ....  | 64 <sup>1</sup> / <sub>4</sub>   | 45 <sup>1</sup> / <sub>2</sub>   | 57 <sup>3</sup> / <sub>4</sub> *  | -1 <sup>1</sup> / <sub>4</sub> |
| 5% Con. Prefce. ....   | 126 <sup>1</sup> / <sub>2</sub>  | 116 <sup>3</sup> / <sub>4</sub>  | 112 <sup>1</sup> / <sub>2</sub> * | -4 <sup>1</sup> / <sub>2</sub> |
| 5% Red. Pref. (1950) ..  | 113                              | 108 <sup>1</sup> / <sub>2</sub>  | 109 <sup>1</sup> / <sub>2</sub> * | —                              |
| 4% Deb. ....   | 119 <sup>1</sup> / <sub>2</sub>  | 110 <sup>1</sup> / <sub>2</sub>  | 103 <sup>1</sup> / <sub>2</sub>   | -3 <sup>1</sup> / <sub>2</sub> |
| 4 <sup>1</sup> / <sub>2</sub> % Deb. ....                      | 121                              | 114                              | 109 <sup>1</sup> / <sub>2</sub>   | -2                             |
| 4 <sup>1</sup> / <sub>2</sub> % Deb. ....                      | 129                              | 121                              | 114 <sup>1</sup> / <sub>2</sub>   | —                              |
| 5% Deb. ....   | 141                              | 134                              | 126 <sup>1</sup> / <sub>2</sub>   | -1                             |
| 2 <sup>1</sup> / <sub>2</sub> % Deb. ....                      | 79 <sup>1</sup> / <sub>2</sub>   | 74                               | 69 <sup>1</sup> / <sub>2</sub>    | -3 <sup>1</sup> / <sub>2</sub> |
| 5% Rt. Charge ....   | 136 <sup>1</sup> / <sub>2</sub>  | 130                              | 120 <sup>1</sup> / <sub>2</sub>   | -5                             |
| 5% Cons. Guar. ....  | 135 <sup>1</sup> / <sub>4</sub>  | 127 <sup>3</sup> / <sub>4</sub>  | 119 <sup>1</sup> / <sub>2</sub> * | -3                             |
| L.M.S.R.   |                                  |                                  |                                   |                                |
| Ord. ....  | 35 <sup>5</sup> / <sub>8</sub>   | 17                               | 28 <sup>1</sup> / <sub>2</sub> *  | -1 <sup>1</sup> / <sub>2</sub> |
| 4% Prefce. (1923) ....   | 83                               | 52 <sup>1</sup> / <sub>2</sub>   | 72 <sup>1</sup> / <sub>2</sub> *  | -2 <sup>1</sup> / <sub>2</sub> |
| 4% Prefce. ....  | 92 <sup>3</sup> / <sub>4</sub>   | 81                               | 81*                               | -2 <sup>1</sup> / <sub>2</sub> |
| 5% Red. Pref. (1955) ..  | 109 <sup>1</sup> / <sub>4</sub>  | 103 <sup>1</sup> / <sub>4</sub>  | 103 <sup>1</sup> / <sub>2</sub>   | -1 <sup>1</sup> / <sub>2</sub> |
| 4% Deb. ....   | 111 <sup>3</sup> / <sub>4</sub>  | 105 <sup>9</sup> / <sub>16</sub> | 101                               | —                              |
| 5% Red. Deb. (1952) ..   | 119 <sup>5</sup> / <sub>8</sub>  | 115 <sup>1</sup> / <sub>2</sub>  | 113 <sup>1</sup> / <sub>2</sub>   | -1                             |
| 4% Guar. ....  | 106 <sup>3</sup> / <sub>4</sub>  | 101 <sup>5</sup> / <sub>8</sub>  | 96 <sup>1</sup> / <sub>2</sub>    | -1 <sup>1</sup> / <sub>2</sub> |
| L.N.E.R.   |                                  |                                  |                                   |                                |
| 5% Pref. Ord. ....   | 14                               | 9                                | 10                                | —                              |
| Def. Ord. ....   | 7 <sup>1</sup> / <sub>4</sub>    | 4 <sup>3</sup> / <sub>4</sub>    | 5 <sup>1</sup> / <sub>4</sub>     | —                              |
| 4% First Prefce. ....  | 79 <sup>1</sup> / <sub>4</sub>   | 55 <sup>1</sup> / <sub>4</sub>   | 72 <sup>1</sup> / <sub>2</sub>    | -1 <sup>1</sup> / <sub>2</sub> |
| 4% Second Prefce. ....   | 317 <sup>1</sup> / <sub>8</sub>  | 18 <sup>1</sup> / <sub>4</sub>   | 23                                | -1 <sup>1</sup> / <sub>2</sub> |
| 5% Red. Pref. (1955) ..  | 100 <sup>1</sup> / <sub>2</sub>  | 77 <sup>3</sup> / <sub>4</sub>   | 99 <sup>1</sup> / <sub>2</sub>    | —                              |
| 4% First Guar. ....  | 104 <sup>1</sup> / <sub>2</sub>  | 98 <sup>3</sup> / <sub>4</sub>   | 93                                | -1 <sup>1</sup> / <sub>2</sub> |
| 4% Second Guar. ....   | 99                               | 90                               | 87                                | -2                             |
| 3% Deb. ....   | 85 <sup>3</sup> / <sub>4</sub>   | 79                               | 75                                | —                              |
| 4% Deb. ....   | 109 <sup>3</sup> / <sub>4</sub>  | 104 <sup>1</sup> / <sub>2</sub>  | 99 <sup>1</sup> / <sub>2</sub> †  | —                              |
| 5% Red. Deb. (1947) ..   | 116 <sup>1</sup> / <sub>4</sub>  | 110 <sup>1</sup> / <sub>2</sub>  | 109 <sup>1</sup> / <sub>2</sub>   | -1                             |
| 4 <sup>1</sup> / <sub>2</sub> % Sinking Fund<br>Red. Deb. .... | 111 <sup>1</sup> / <sub>2</sub>  | 107 <sup>1</sup> / <sub>2</sub>  | 106 <sup>1</sup> / <sub>2</sub>   | -2 <sup>1</sup> / <sub>2</sub> |
| SOUTHERN   |                                  |                                  |                                   |                                |
| Pref. Ord. ....  | 98 <sup>3</sup> / <sub>4</sub>   | 82 <sup>1</sup> / <sub>2</sub>   | 90 <sup>1</sup> / <sub>2</sub> *  | -3                             |
| Def. Ord. ....   | 27 <sup>3</sup> / <sub>8</sub>   | 20 <sup>1</sup> / <sub>8</sub>   | 22 <sup>1</sup> / <sub>2</sub> *  | -1 <sup>1</sup> / <sub>4</sub> |
| 5% Pref. ....  | 120 <sup>3</sup> / <sub>4</sub>  | 118 <sup>1</sup> / <sub>2</sub>  | 109 <sup>1</sup> / <sub>2</sub> * | -4                             |
| 5% Red. Pref. (1964) ..  | 119 <sup>3</sup> / <sub>4</sub>  | 115 <sup>1</sup> / <sub>4</sub>  | 111 <sup>1</sup> / <sub>2</sub> * | -1                             |
| 5% Guar. Prefce. ....  | 136                              | 129 <sup>1</sup> / <sub>2</sub>  | 120*                              | -3 <sup>1</sup> / <sub>2</sub> |
| 5% Red. Guar. Pref. (1957) ..                                  | 120                              | 115 <sup>3</sup> / <sub>4</sub>  | 112 <sup>1</sup> / <sub>2</sub> * | -1                             |
| 4% Deb. ....   | 117 <sup>1</sup> / <sub>2</sub>  | 109 <sup>1</sup> / <sub>2</sub>  | 102 <sup>1</sup> / <sub>2</sub>   | -2 <sup>1</sup> / <sub>2</sub> |
| 5% Deb. ....   | 140                              | 134                              | 125 <sup>1</sup> / <sub>2</sub>   | -2                             |
| 4% Red. Deb. ....  | 116 <sup>1</sup> / <sub>2</sub>  | 110                              | 108                               | —                              |
| 1962-67  |                                  |                                  |                                   |                                |
| BELFAST & C.D.   |                                  |                                  |                                   |                                |
| Ord. ....  | 9                                | 4 <sup>1</sup> / <sub>2</sub>    | 5                                 | —                              |
| FORTH BRIDGE   |                                  |                                  |                                   |                                |
| 4% Deb. ....   | 107                              | 105                              | 102 <sup>1</sup> / <sub>2</sub>   | —                              |
| 4% Guar. ....  | 107 <sup>5</sup> / <sub>16</sub> | 104                              | 100 <sup>1</sup> / <sub>2</sub>   | -1                             |
| G. NORTHERN<br>(IRELAND)                                       |                                  |                                  |                                   |                                |
| Ord. ....  | 19 <sup>1</sup> / <sub>2</sub>   | 9 <sup>3</sup> / <sub>4</sub>    | 10                                | —                              |
| G. SOUTHERN<br>(IRELAND)                                       |                                  |                                  |                                   |                                |
| Ord. ....  | 63                               | 41                               | 47                                | —                              |
| Prefce. ....   | 65                               | 46                               | 59                                | +1                             |
| Guar. ....   | 97 <sup>1</sup> / <sub>4</sub>   | 81                               | 82                                | +1                             |
| Deb. ....  | 99 <sup>3</sup> / <sub>4</sub>   | 83 <sup>1</sup> / <sub>4</sub>   | 93 <sup>1</sup> / <sub>2</sub>    | +1 <sup>1</sup> / <sub>2</sub> |
| L.P.T.B.   |                                  |                                  |                                   |                                |
| 4 <sup>1</sup> / <sub>2</sub> % "A" ....                       | 127 <sup>3</sup> / <sub>4</sub>  | 121                              | 113 <sup>1</sup> / <sub>2</sub>   | -3 <sup>1</sup> / <sub>2</sub> |
| 5% "A" ....  | 138 <sup>1</sup> / <sub>4</sub>  | 133 <sup>1</sup> / <sub>2</sub>  | 122 <sup>1</sup> / <sub>2</sub>   | -5                             |
| 4 <sup>1</sup> / <sub>2</sub> % "T.F.A." ....                  | 111 <sup>1</sup> / <sub>2</sub>  | 108 <sup>1</sup> / <sub>2</sub>  | 105                               | -1                             |
| 5% "B" ....  | 131 <sup>3</sup> / <sub>4</sub>  | 123 <sup>3</sup> / <sub>4</sub>  | 118 <sup>1</sup> / <sub>2</sub>   | -1                             |
| "C" ....   | 112 <sup>1</sup> / <sub>2</sub>  | 93                               | 92*                               | -4                             |
| MERSEY   |                                  |                                  |                                   |                                |
| Ord. ....  | 40 <sup>3</sup> / <sub>4</sub>   | 23                               | 35 <sup>1</sup> / <sub>2</sub> *  | -1                             |
| 4% Perp. Deb. ....   | 103                              | 98                               | 99                                | -1                             |
| 3% Perp. Deb. ....   | 78                               | 74 <sup>3</sup> / <sub>4</sub>   | 75 <sup>1</sup> / <sub>2</sub>    | -1                             |
| 3% Perp. Prefce. ....  | 68 <sup>7</sup> / <sub>8</sub>   | 63 <sup>1</sup> / <sub>4</sub>   | 65 <sup>1</sup> / <sub>2</sub> *  | —                              |

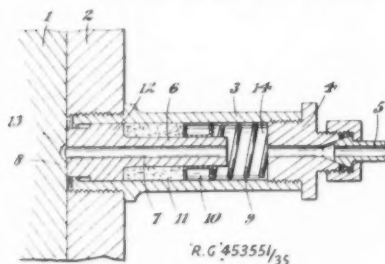
\* ex dividend

## ABSTRACTS OF RECENT PATENTS\*

## No. 453,551. Lubricators

Headley Townsend Backhouse, of 12 Melina Court, St. John's Wood, London, N.W.8. (December 6, 1935.)

In a lubricator for applying oil to a moving part of a mechanism only so long as that part is moving, and for preventing the flow of oil when the part is at rest, the moving part 1, which is the rotor of a pump, is in contact with a stationary end cover 2 into which is screwed a tubular guide member 3 having a plug 4 in one end through which oil may be supplied by the pipe 5. Located in the other end of the guide member is a longitudinally movable plunger 6 having an axial hole 7. The end 8 of the plunger is pressed



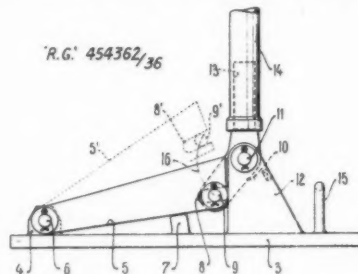
into contact with the rotor end by a spring 9 bearing against the plug 4 and the floating collar 10, which transmits the pressure through an oil-tight packing 11 to a shoulder 12 formed on the plunger. Recesses 13 are formed in the rotor end such that they come into communication with the hole 7. A gravity tank for supplying oil through the pipe 5 under low pressure is provided. In the operation of the device oil gravitates into the cavity 14 in the guide member, and so long as the rotor is moving it will "wipe-off" oil from the end of the hole 7. When the pump is stopped the rotor forms a closure for the end of the hole 7 and any further flow of oil is prevented. The cavities 13 may be omitted, sufficient oil being "wiped-off" from the end of the plunger by the moving part. —(Accepted September 14, 1936.)

## No. 454,362. Railway Track Aligning Devices

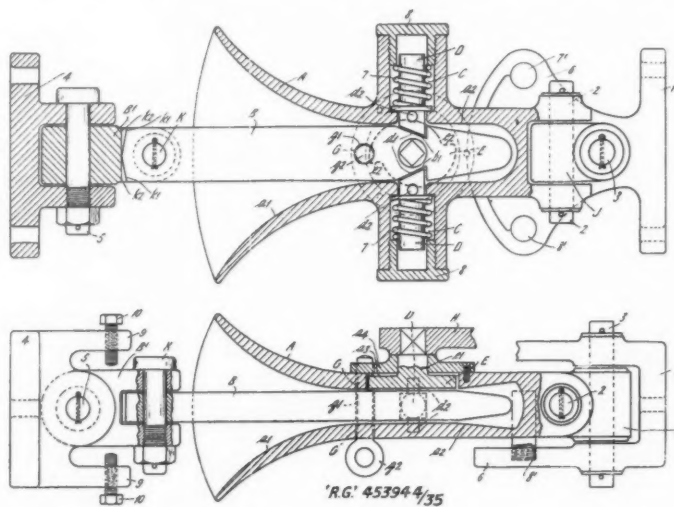
Hendrik Jan Nijenhuis, of No. 12 Stationsway, Woerden, The Netherlands. (Application date: April 22, 1936.)

A track aligner comprises a base 3 provided near the front with a lug 4, to which the forward end of the rail-engaging element 5 is pivoted by means of a pin 6. In its normal position the element rests on an abutment 7 provided on the base, and its straight top edge slopes slightly down towards the

front. The rear end of the rail-engaging element has a longitudinal open slot 8 engaging a pin 9 mounted for rotation in the end of the short arm 10 of a bell-crank lever pivoted at 11 to a bracket 12 secured to the



base 3. The arm 10 makes an obtuse angle with the normally vertical long arm of the bell-crank lever, the long arm comprising a relatively short bar 13 projecting into a socket at the lower end of a hand lever 14 of suitable length. On pulling the hand lever 14 outwardly and downwardly, the pin or roller 9 will move upwards along the arcuate path 16, thus raising the rear end of the element 5 and thereby exerting lateral thrust on the rail with a minimum lift. Simultaneously, increased downward pressure is exerted on the base 3, serving to obviate any tendency of the base to slip rearwardly



away from the rail. The magnitude of the angle between the arms of the bell-crank lever may be modified, but in practice it has been found that with an obtuse angle as shown, very satisfactory results are obtained. —(Accepted September 29, 1936.)

## No. 453,944. Improved Couplings

John Waller Anderson, of Colville St., Wavertree, Liverpool. (April 10.)

A coupling for vehicles of the type in which a spear-headed tongue-part attached to one vehicle enters a recess or opening in a frame attached to the end of the other vehicle, and is automatically retained in coupling engagement by spring-controlled latches, comprises a socket-part A having a bore a1 of rectangular cross-section which is flared outwardly, and which at the neck-part a2 corresponds in cross-section with that of a tongue-part B, the socket is attached by a universal joint J to a back plate 1 bolted to the vehicle, the universal joint having pins 2 and 3 arranged at right angles, the pin 2 engaging the socket-part, and the pin 3 engaging the back plate. The part B' of the tongue B is attached to its back plate 4 by the pin 5. The back plate 1 has a flange 6 which carries two limit pins 7' and 8', and the back plate 4 has flanges 9 which carry adjustable limit pins 10. C are transverse recesses formed in the socket-part and which house the bolts D, which latter are pressed inwardly by springs 7 compressed by screwed end caps 8. The bolts have inclined faces d1 which engage the notches b1 in the end of the tongue-part and have pins d2 which engage grooves in the socket-part and which are engaged by a cam E mounted in a recess a3 formed in the side of the part A and closed by a cap a4 which forms the bearing for

the spindle e1 of the cam, to which spindle an external operating handle H is fixed. The operating part of the cam surface is notched as at e2 to hold it in position. In the case of railway rolling stock, two complete couplings are fitted to each end of each vehicle, at equal distances horizontally on each side of the fore-and-aft centre lines so that the pair is always available for coupling whichever ends of the vehicles are adjacent. —(Accepted September 22, 1936.)

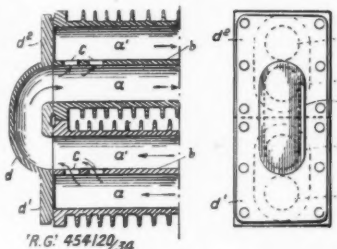
\* These abridgments of recently published specifications are specially compiled for THE RAILWAY GAZETTE by permission of the Controller of His Majesty's Stationery Office. Group abridgments can be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2. either sheet by sheet as issued, on payment of a subscription of 5s. a group volume, or in bound volumes, price 2s. each, and the full specifications can be obtained from the same address price 1s. each.



**No. 454,120. Feedwater Heaters**

Paul Anders, of 33 Dernburgstrasse, Charlottenburg, Berlin 5, Germany. (Convention date: Germany, November 7, 1934.)

In a feedwater heater tube unit, two tubes *a* and *a'* are provided on the outside with gills and have an intermediate wall *b* common to both. The

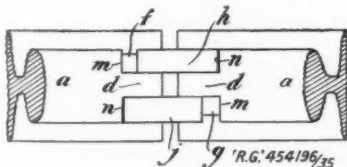


wall *b* is provided at both ends with openings *c*. The ends of each pair of double tubes *a-a'* are connected together by means of terminal bends *d*, in such a manner that the water flows through the successively disposed units. The bend *d* establishes direct communication between the lower tube *a* and the tube *a'* of two adjacent double tubes, whereas the externally situated tubes *a* and *a'* are closed by the flat portions *d'* and *d''* of the terminal bend. The opposite ends of each double tube are connected in each case with the ends of an adjacent unit. The stream of water which flows from right to left through the lower double tube *a-a'* passes through the openings *c* into *a'* and through the bend *d* into the superimposed tube *a*, where it divides again in the same manner. (Accepted September 24, 1936.)

**No. 454,196. Railway Rail Joints**

Anders Sørensen Bak, of Suldrup, near Støvring, Denmark. (December 9, 1935.)

In an improved rail joint the two rail ends *a* are connected together by fishplates *f* and *g*. The rail ends are provided on the two sides of the head



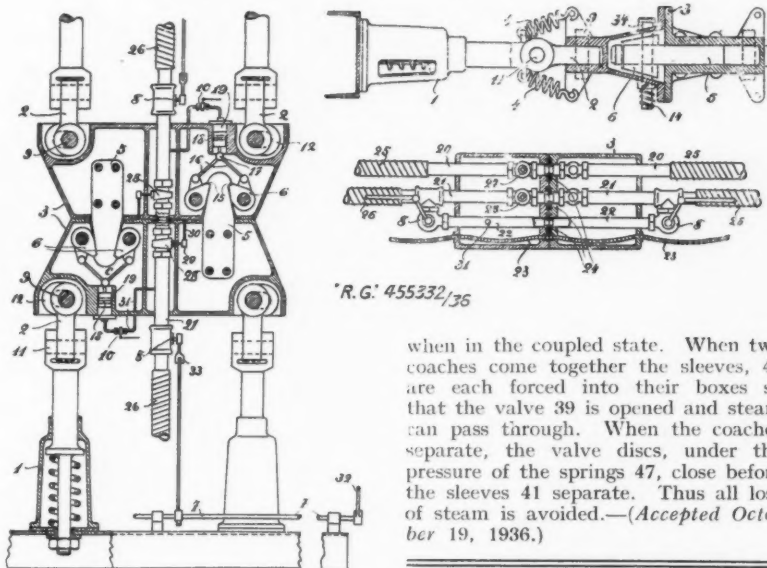
of each rail end with recesses *n* and *m* each occupying about one-third the thickness of the top of the rail, so that only the middle third *d* of the top of each rail extends to the rail top. On the top edges of the fishplates *f* and *g* there are provided tenons *h* and *j* respectively which project into the recesses *n* and *m* respectively in the heads of the rails up to their top edge, and these tenons have each the same length as the combined length of the adjoining recesses *n* and *m*. The two tenons *h* and *j* bridge the space between the rail ends *d* and the space between the tenon *h* of the fishplate *f*,

and the end of the recess *m* in the left hand rail end is bridged by the rail end *d* and the tenon *j* of the fishplate *g*, whilst the space between the fishplate tenon *j* and the end of the recess *m* in the right-hand rail end is bridged by the head part *d* of this rail end and the tenon *h* of the fishplate *f*. With this bridging, neither the foot nor the stem of the rail is detrimentally affected and, in addition, a substantial part of the head of the rail remains unaffected by the device. (Accepted September 25, 1936.)

**No. 455,332. Railway Coach Couplings**

Kurt Leopold, of 22, Moritzstrasse, Berlin, S.42, Germany. (January 8, 1936.)

In the improved coupling the shanks of the buffer *l* are provided with a link *2* pivotable about the pin *11*. Their horizontal displacement is made possible by the slot holes *12* which are



middle of the coupling box, the steam piping *20* being at the top; the main compressed air piping *21* underneath this; then the compressed air piping *22*; which is used for uncoupling and which passes into the main compressed air piping *21* through a shut-off valve *8* and finally the lighting cable *23* at the bottom. The free ends of all these pipings terminate in rubber packings *24* formed with a flange, so that when coupled the rubber increases the tightness of the joints. The steam and air pipes pass to the coaches through tubing *25* and *26* respectively, and are each provided in the coupling box with a shut-off valve *27*, *28* respectively, these valves being closed in the uncoupled condition. Both valves have levers *29* and plungers *30* which protrude from the face of the coupling box and which open the valves when two coaches come together. The compressed air uncoupling pipe *22* has no shut-off valve, as it functions only

when in the coupled state. When two coaches come together the sleeves, *41* are each forced into their boxes so that the valve *39* is opened and steam can pass through. When the coaches separate, the valve discs, under the pressure of the springs *47*, close before the sleeves *41* separate. Thus all loss of steam is avoided. (Accepted October 19, 1936.)

**COMPLETE SPECIFICATIONS  
ACCEPTED**

454,055. Vereinigte Eisenbahn-Signal-Werke Ges. Automatic block protection for railways by means of axle counting mechanism.

454,122. Illinois Tool Works. Fastening devices such as nuts, bolts, screws, and the like.

454,117. A.G. Brown, Boveri, & Cie. Regulating arrangements for pressure-fired steam generators or the like.

454,354. Porsche Ges., Dr. Ing. h.c.F. Bogies for rail vehicles.

454,370. Karim, F. Electric supply systems on railway and like vehicles.

454,521. Cossentine, F. A. B. Screws, bolts and studs.

454,527. Turton, Platts, & Co. Ltd., G., and Cowen, J. C. Anti-creep anchors for railway and like rails.

454,744. Andersson, K. I. L., Gustavsson, O. G. L., and Kristofferson, S. Tyre for carriage wheels, particularly railway carriage wheels.

454,878. Dyson, J., and Dyson & Co. Ltd., R. A. Road vehicles for the combined road and rail transport of material.

## CONTRACTS AND TENDERS

G. H. Sheffield & Co. (Engineers) Ltd. has received an order for four Sheffield-Twinberrow diamond-framed carriage bogies, complete with wheels and axles, for the Gold Coast Government Railway, 3 ft. 6 in. gauge, to the specification and inspection of the Crown Agents for the Colonies.

The Chinese Government Purchasing Commission has placed orders to the inspection of Messrs. Sandberg for equipment required for the Canton-Hankow Railway with the Vulcan Foundry Co. Ltd. for locomotive spares, including firebox plates, couplers, springs, Isothermos lubricators, and Clyde sootblowers; and with the Superheater Co. Ltd. for superheater spares.

The Egyptian State Railways Administration has recently placed the following orders:—

Colvilles Limited, Steel joists. (Ref. No. E.S.R. 1,322. Total cost, £1,662. Delivery l.o.b. Glasgow.)

Metropolitan-Cammell Carriage & Wagon Co. Ltd., Shells for buffer rods. (Ref. No. E.S.R. 21,580. Total cost, £156. Delivery l.o.b. Liverpool.)

Société Anglo-Franco-Belge de Matériel de Chemin de Fer, Shells for buffer rods. (Ref. No. E.S.R. 21,580. Total cost, £132. Delivery l.o.b. Antwerp.)

Kitson & Co. Ltd. has received an order from the Leopoldina Railway for one locomotive boiler.

Guest, Keen, Williams Limited has received an order from the Indian Stores Department for 660 cwt. of m.s. hexagonal nuts.

Usines et Boulonneries de Mariemont through H. J. Skelton & Co. Ltd. has received an order from the Cordoba Central Railway for 300,000 m.s. dogspikes and 8,000 screws.

The Chief Controller of Stores, Indian Stores Department, New Delhi, has placed the following orders:—

Samuel Osborn (India) Limited, 600 B.G. axles (total price, Rs.80,700).

Shaw Wallace & Co. Ltd., locomotive axles (total price, Rs.34,587) and various straight axles (total price, Rs.79,435).

Jessop & Co. Ltd., 159 B.G. locomotive tyres (total price, Rs.22,819).

Krupp Indian Trading Co. Ltd., 88 locomotive tyres (total price, Rs.11,248).

Burn & Co. Ltd., 80 locomotive tyres (total price, Rs.11,588).

United Steel Cos. (India) Ltd., 45 disc wheels with tyres, 50 glut rings and 50 steel tyres for B.G. motor coaches (total price, Rs.19,984).

Suren Piras & Co., 444 locomotive tyres (total price, Rs.53,126).

Skoda (India) Limited, 122 tyres (total price, Rs.13,756).

John Fowler & Co. (India) Ltd., one compound steam road roller (total price, Rs.10,685).

Howell & Co. Ltd. has received an order from the Buenos Ayres Western Railway for 8,100 superheater flue and boiler tubes.

Machine Tools (India) Limited has received orders from the Indian Stores Department for two high-speed drilling machines and one Davla hacksawing machine.

S. A. Gilsoco has received an order from the South Indian Railway Ad-

ministration to the inspection of Messrs. Robert White & Partners for the supply of 183,000 dogspikes and fangbolts.

The Vulcan Foundry Co. Ltd. has received orders to the inspection of Messrs. Rendel, Palmer & Tritton for the supply of five DS class and 10 VS class superheated boilers with steel fireboxes.

Robert Stephenson & Co. Ltd. has received an order from the Great Western of Brazil Railway for eight locomotive boilers, together with a quantity of spare parts.

The Indian Standard Wagon Co. Ltd. has received an order from the East Indian Railway for 328 laminated bearing springs.

Stewarts and Lloyds Limited has received an order from the Buenos Ayres Great Southern Railway for 4,400 steel boiler tubes.

The Crown Agents for the Colonies have recently placed the following orders:—

Lancashire Dynamo & Crypto Limited, alternating current generator.

Standard Telephones & Cables Limited, automatic exchange.

Whitecross Co. Ltd., bronze and copper wire. Callenders Cable & Construction Co. Ltd., cable.

Telegraph Construction & Maintenance Co. Ltd., cables and joint boxes.

Taylor Bros. & Co. Ltd., carriage and wagon tyres.

Dorman, Long & Co. Ltd., chromador bridge-work.

Staveley Coal & Iron Co. Ltd., cast iron water pipes.

Stanton Ironworks Co. Ltd., cast iron piping.

Nuts & Bolts (Darlaston) Limited, clip bolts.

Thomas Bolton & Sons Ltd., copper ingots.

Southern Rolling & Wire Mills Limited, copper wire.

Wellington Tube Works Limited, galvanised W.I. water pipes.

Pettersons Limited, generating plant.

Reynolds & Wilson, lathes.

Troughton & Young Limited, lighting fittings.

North British Locomotive Co. Ltd., locomotive frame.

T. Firth & J. Brown Limited, locomotive tyres.

The Whitehead Iron & Steel Co. Ltd., mild steel.

Monk Bridge Iron & Steel Co. Ltd., locomotive tyres.

J. Lysaght Limited, M.S. sheets.

Wm. Baird & Co. Ltd., pig iron.

Harland Engineering Co. Ltd., pumping sets.

Colvilles Limited, steel sleepers.

Guest, Keen, Baldwins Iron & Steel Co. Ltd., steel sleepers.

Guest, Keen & Nettlefolds Limited, steel sleeper keys.

United Steel Cos. Ltd., steel sleepers.

Stewarts and Lloyds Limited, steel tubing.

Motherwell Bridge & Engineering Co. Ltd., steelwork for bridge.

Darlington Railway Plant & Foundry Co. Ltd., switches and crossings.

Siemens Bros. & Co. Ltd., telegraph line material.

General Electric Co. Ltd., telephone apparatus.

Bullers Limited, telephone material.

Erierson Telephones Limited, telephone switchboards.

Capper, Pass & Son Ltd., tin ingots.

Hurst, Nelson & Co. Ltd., water tanks.

Dorman, Long & Co. Ltd. has received an order from the Central Argentine Railway for 9,100 pairs of fishplates for 85-lb. rails.

Steel, Peech & Tozer Limited has received an order for 211 locomotive tyres from the Cordoba Central Railway.

Carl F. Benrath has received an order from the Mysore State Railways, to the inspection of Messrs. Rendel, Palmer & Tritton, for one internal grinding machine.

Taylor Bros. & Co. Ltd. has received orders from the Central Argentine Railway for 100 locomotive tyres and from the Leopoldina Railway for 200 pairs of wheels and axles required for bogie covered goods wagons.

J. Baker & Bessemer Limited has received an order from the Central Argentine Railway for 200 locomotive tyres.

The Associated Equipment Co. Ltd. has received orders from the Swansea Improvements & Tramways Company for 12 Regent direct-injection, oil-engined, double-decked vehicles, required to replace trams, and from the London Passenger Transport Board for five Matador goods vehicles.

Nicaise & Delcuve has received an order from the Leopoldina Railway for 50 all-steel bogie covered goods wagons.

Whitelegg and Rogers Limited has received the following orders:—

36 Ajax patent axlebox grease lubricators for the Crown Agents for the Colonies, for application to existing Nanoya Class locomotives, Ceylon Government Railways.

104 Ajax patent axlebox grease lubricators for new 4-4-0 passenger locomotives and tenders, now under construction by the North British Locomotive Co. Ltd., for the Egyptian State Railways, and spare sets of Ajax axlebox grease lubricators for the Egyptian State Railways.

16 Ajax patent hand-operated firedoors and four Ajax patent air-operated firedoors for application to existing locomotives, Canton Hankow Railway, to the order of the Chinese Government Purchasing Commission, and to the inspection of Messrs. Sandberg.

D. Wickham & Co. Ltd. has received an order from the Central Uruguay Railway for four No. 8 petrol-driven light inspection railcars.

The Rand Water Board is calling for tenders for the supply and delivery of one 3 ft. 6 in. gauge, saturated steam, side tank, shunting locomotive, complete with all necessary fittings, accessories, and spares. Tenders endorsed "Contract No. 482—Tender for Steam Shunting Locomotive, &c., Zwartkopies" should reach the Secretary, Rand Water Board, 74, Commissioner Street, Johannesburg, by May 7. Tenders must be accompanied by a certified cheque or cash deposit for 5 per cent. of the amount of tender. A copy of the specification and general conditions of contract, &c., is available for loan at the Department of Overseas Trade. Local representation is essential and the D.O.T. is prepared to furnish firms desirous of tendering for the supply of material of United Kingdom manufacture, and not represented in South Africa, with the names of United Kingdom merchant houses with local connections who may be willing to handle tenders on their behalf.

## OFFICIAL NOTICES

**THE** Proprietor of British Patent No. 401,764, entitled "Improvements relating to Steam Driven Vehicles," is desirous of entering into arrangement, by way of licence or otherwise, on reasonable terms, for the purpose of exploiting the same and ensuring its full development and practical working in this country. All communications to be addressed to GILL, JENNINGS & EVERY-CLAYTON, 51/52, Chancery Lane, London, W.C.2.

### The Bengal & North Western Railway Company Limited

**THE** Directors are prepared to receive Tenders for the supply of:—  
**FOUR Y.B. TYPE LOCOMOTIVE ENGINES AND TENDERS**

as per Specification to be seen at the Company's Offices.  
Tenders addressed to the undersigned, and envelope marked "Tender for Locomotives," with name of firm tendering, to be lodged not later than Noon on the 16th day of March, 1937.  
For each Specification a fee of £1 will be charged, which cannot, under any circumstances, be returned.

The Directors do not bind themselves to accept the lowest or any Tender.

By Order of the Board,

J. WILLIAMSON,

Managing Director.

237, Gresham House,  
Old Broad Street,  
London, E.C.2.  
18th February, 1937.

**DEPOT** and Transport Manager of large undertaking requires new situation owing to merger of his company. Railway trained, fully qualified in all aspects of rail, road and shipping negotiations and operations, also depot control and costing, warehousing, bonding and Customs procedure.—Apply Box 25, c/o THE RAILWAY GAZETTE, 33, Tothill Street, Westminster, S.W.1.

Tenders are invited, receivable by March 16, for the supply to the Bengal & North Western Railway and Rohilkund & Kumaon Railway respectively, of 701,100 and 50,000 dogspikes. Tenders are receivable at 237, Gresham House, Old Broad Street, London, E.C.2.

Tenders are invited by the Bengal & North Western Railway, receivable by March 16, at 237, Gresham House, Old Broad Street, London, E.C.2, for the supply of four Y.B. type locomotives and tenders.

The Chief Controller of Stores, Indian Stores Department, Engineering Section, New Delhi, invites tenders, receivable by March 18, for the supply of 28,430 solid-drawn steel boiler tubes.

The Chief Controller of Stores, Indian Stores Department, New Delhi, invites tenders, receivable by March 10, for the supply of quantities of switches and crossings.

The South African Railways and Harbours Administration is calling for tenders, to be presented in Johannesburg, South Africa, by March 15, for the supply of quantities of gold numerals, letters and transfer notices. Firms desirous of offering transfers of United Kingdom manufacture can obtain further details from the Department of Overseas Trade.

Newly approved regulations govern the constitution and operation of the Union of South Africa Tender and Supplies Board and these new regulations involve certain changes in the

### His Exalted Highness the Nizam's State Railway

**APPLICATIONS** are invited for two vacancies as Assistant Locomotive Superintendents for H.E.H. the Nizam's State Railway, Hyderabad State, India.

#### Qualifications.

1. Age not less than 25 years.  
2. A good general and technical education.  
3. Service as premium apprentice or pupil in the workshops of a leading British railway or with a well-known firm of locomotive builders.

4. At least three years' subsequent experience in either the drawing office, progress office or in some workshop supervisory capacity. At least one year's drawing office preferred and running experience desirable.

5. Should have passed the qualifying examination for A.M.I.Mech.E. or A.M.Inst.C.E. or possess a certificate exempting from such examinations.

**Salary**—Will be payable in the currency of the Hyderabad State in the grade of O.S. Rs. 550–30–850, at a commencing salary according to age, qualifications and experience. The salary (minimum and maximum), after adding Provident Fund benefit, corresponds approximately to £460 and £719 per annum, respectively. At present there is no Income Tax in Hyderabad State.

**Applications**—Applications are to be by letter only, giving full details of qualifications, age, training and experience, whether married or single, and, accompanied by copies of testimonials, should be addressed to the undersigned not later than 8th March, 1937.

F. ADAMS,  
Secretary.

H.E.H. the Nizam's State  
Railway Board,  
274, Gresham House,  
Old Broad Street,  
London, E.C.2.  
24th February, 1937.

\* The Hyderabad State currency usually varies from Oosmania Sica (O.S.) rupees 114 to 117 per hundred British India rupees.

### (a) The Bengal & North Western Railway Company Limited

### (b) The Rohilkund & Kumaon Railway Company Limited

**THE** Directors are prepared to receive

Tenders for the supply of:—  
(a) 701,100 DOGSPIKES;  
(b) 50,000 DO.

as per combined Specification, to be seen at the Company's Offices.

Tenders addressed to the undersigned and envelope marked "Tender for Dogspikes," with name of firm tendering, to be lodged not later than Noon on the 16th day of March, 1937.

For the Specification a fee of 10s. will be charged, which cannot, under any circumstances, be returned.

The Directors do not bind themselves to accept the lowest or any Tender.

By Order of the Board,

J. WILLIAMSON,

Managing Director.  
Secretary.

237, Gresham House,  
Old Broad Street,  
London, E.C.2.  
19th February, 1937.

### Universal Directory of Railway Officials and Railway Year Book

42nd Annual Edition, 1936-37

Price 20/- net.

This unique publication gives the names of all the principal railway officers throughout the world, together with essential particulars of the systems with which they are connected. Much general and statistical information about railways is also concisely presented.

**THE DIRECTORY PUBLISHING CO. LTD.**  
33, Tothill Street, Westminster, S.W.1.

Ohio, U.S.A., recently announced in Montreal the appointment of the Railway Power & Engineering Corporation Limited, as exclusive Timken railway representatives for the Dominion of Canada; it has offices in Montreal. Colonel Sanders also announced that arrangements had been made with the Railway Power & Engineering Corporation and the Dominion Wheel & Foundries Limited to manufacture in Canada the roller-bearing boxes and other parts used with Timken bearings for locomotives and cars. The Timken Roller Bearing Co. Ltd., with head office in Toronto, is a subsidiary of the main firm of that name whose factory is at Canton, Ohio.

**FRENCH RAILWAY POSTERS.**—An effective poster issued by the P.L.M. Railway draws attention, by means of a cleverly conceived design, to the Roman and mediæval relics which abound near Avignon, and which can be visited by the company's road motor services. We have also received a new winter sports poster issued by the Alsace-Lorraine Railways, showing the Vallée de Munster. The effect of distance has been very successfully achieved, and with it one of impressive silence and solitude, enhanced by the solitary figure on skis in the foreground. A poster displayed on behalf of the combined French railways reminds winter-bound Britain that at the same season there are "sunshine and fun" to be enjoyed on the French Riviera.

Lt.-Col. W. C. Sanders, General Manager of the Timken Roller Bearing Company's Railway Division, Canton,



## Railway Share Market

Sentiment in the stock and share markets has remained under the influence of the trend in British Government securities. Owing to the continued reaction in the latter at the beginning of the week, there was a general decline in fixed-interest-bearing stocks and many high-grade industrial shares also reacted heavily. In the circumstances it could hardly be expected Home Railway stocks would not again move against holders. Owing to a steadier tendency in Government securities market conditions improved on Wednesday and the undertone in Railway stocks became better, particularly as another encouraging batch of traffic figures came to hand.

L.M.S. ordinary was steadier at 28½ on the news that traffics rose by £49,000 in the past week, and it is now being pointed out that the yield given by the stock is not unsatisfactory, especially as there is a reasonable chance of a higher

dividend for the current year. The 4 per cent. and 1923 preference stocks have declined sharply on the week to 81 and 72½ respectively at which levels buyers were attracted by the yields offered. L.N.E. second preference at 23 also offers a good return on the basis of the dividend for the past year, which was up to best anticipations, as does the first preference at 72½. Last week's traffics show a gain of £14,000. Great Western was firmer following the meeting, and the £20,000 traffic improvement for the past week. Southern issues remained out of favour, the £8,000 rise in the past week's receipts being below market expectations. Southern deferred is now 22½, while the preferred has reacted to 90½. London Transport "C" has fallen to below 92, partly owing to talk of a special tax on petrol.

Declines in Foreign Railway stocks were not so numerous or extensive as

with Home Railway stocks, but the general trend was against holders. Argentine Railway stocks were affected by the view that before long a falling off in the rate of traffic increases is likely. Nevertheless it continues to be anticipated that steady progress will be made, and it is noticeable that there is ready demand for the preference stocks on any reaction in price, particularly those of B.A. Gt. Southern and Central Argentine. In common with the ordinary stocks they are lower on the week, as are those of B.A. Pacific and B.A. Western.

Elsewhere San Paulo lost part of its recent rise. Current anticipations are that the dividend for the year will be brought up to 5 per cent. tax free. Antofagasta were relatively steady, and a better price was made by Nitrate Rails. Canadian Pacific Railway issues were reactionary in sympathy with American railway stocks.

### Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

| Railways                 | Miles open<br>1936-37         | Week<br>Ending | Traffics for Week  |                                       | No. of Weeks | Aggregate Traffics to Date |              |                         | Shares<br>or<br>Stock | Prices          |                |                           |                          |           |            |     |
|--------------------------|-------------------------------|----------------|--------------------|---------------------------------------|--------------|----------------------------|--------------|-------------------------|-----------------------|-----------------|----------------|---------------------------|--------------------------|-----------|------------|-----|
|                          |                               |                | Total<br>this year | Inc. or Dec.<br>compared<br>with 1936 |              | Totals                     |              | Increase or<br>Decrease |                       | Highest<br>1936 | Lowest<br>1936 | Feb. 24,<br>1937          | Yield %<br>(See<br>Note) |           |            |     |
|                          |                               |                |                    |                                       |              | This Year                  | Last Year    |                         |                       |                 |                |                           |                          |           |            |     |
| South & Central America. | Antofagasta (Chili) & Bolivia | 834            | 21.2.37            | £ 17,020                              | +            | £ 2,830                    | 8            | 113,600                 | 113,990               | —               | £ 390          | Ord. Stk.                 | 25                       | 151½      | 25         | Nil |
|                          | Argentine North Eastern       | 753            | 20.2.37            | 7,388                                 | —            | 75                         | 34           | 301,687                 | 265,728               | +               | 34,959         | A. Deb.                   | 12                       | 2         | 15         | Nil |
|                          | Argentine Transandine         | —              | —                  | —                                     | —            | —                          | —            | —                       | —                     | —               | —              | —                         | —                        | —         | —          | —   |
|                          | Bolivar                       | 174            | Jan., 1937         | 5,400                                 | —            | 100                        | 5            | 5,400                   | 5,500                 | —               | 100            | 6 p.c. Deb.               | 9                        | 5         | 7½         | 4½  |
|                          | Brazil                        | —              | —                  | —                                     | —            | —                          | —            | —                       | —                     | —               | —              | —                         | —                        | —         | —          | —   |
|                          | Buenos Ayres & Pacific        | 2,806          | 20.2.37            | 122,395                               | +            | 20,457                     | 34           | 2,911,891               | 2,694,931             | +               | 216,960        | Ord. Stk.                 | 17½                      | 6         | 15         | Nil |
|                          | Buenos Ayres Central          | 190            | 6.2.37             | \$159,800                             | +            | \$58,900                   | 32           | \$4,654,900             | \$3,752,400           | +               | \$902,500      | Mt. Deb.                  | 31½                      | 11        | 39½        | Nil |
|                          | Buenos Ayres Gt. Southern     | 5,084          | 20.2.37            | 228,722                               | +            | 57,377                     | 34           | 4,751,321               | 4,343,961             | +               | 407,360        | Ord. Stk.                 | 31½                      | 13½       | 31½        | Nil |
|                          | Buenos Ayres Western          | 1,930          | 20.2.37            | 56,266                                | +            | 3,124                      | 34           | 1,605,785               | 1,477,146             | +               | 128,639        | "                         | 29½                      | 11        | 29         | Nil |
|                          | Central Argentine             | 3,700          | 20.2.37            | 179,715                               | +            | 44,074                     | 34           | 5,049,075               | 4,130,636             | +               | 918,439        | "                         | 329½                     | 8½        | 30½        | Nil |
|                          | Do.                           | —              | —                  | —                                     | —            | —                          | —            | —                       | —                     | —               | —              | —                         | —                        | —         | —          | —   |
|                          | Cent. Uruguay of M. Video     | 273            | 13.2.37            | 13,192                                | —            | 679                        | 33           | 480,060                 | 346,236               | +               | 61,824         | Ord. Stk.                 | 21                       | 4½        | 17½        | Nil |
|                          | Do. Eastern Extn.             | 311            | 13.2.37            | 2,422                                 | —            | 403                        | 33           | 74,276                  | 64,051                | +               | 10,225         | "                         | 7½                       | 3         | 11½        | Nil |
|                          | Do. Northern Extn.            | 185            | 13.2.37            | 1,746                                 | —            | 412                        | 33           | 51,435                  | 45,515                | +               | 5,920          | "                         | —                        | —         | —          | —   |
|                          | Do. Western Extn.             | 211            | 13.2.37            | 1,273                                 | +            | 5                          | 33           | 34,315                  | 28,586                | +               | 5,729          | "                         | —                        | —         | —          | —   |
|                          | Cordoba Central               | 1,218          | 21.2.37            | 28,410                                | +            | 2,870                      | 34           | 1,030,810               | 988,330               | +               | 102,480        | Ord. Inc.                 | 5                        | 1         | 5½         | Nil |
|                          | Costa Rica                    | 188            | Dec., 1936         | 19,353                                | +            | 7,331                      | 26           | 110,934                 | 80,721                | +               | 30,213         | Stk.                      | 36½                      | 32        | 36         | 59½ |
|                          | Dorada                        | 70             | Jan., 1937         | 15,300                                | +            | 2,000                      | 5            | 15,300                  | 13,300                | +               | 2,000          | 1 Mt. Db.                 | 107                      | 101½      | 104½       | 5½  |
|                          | Entre Rios                    | 810            | 20.2.37            | 11,945                                | +            | 1,712                      | 34           | 446,995                 | 379,316               | +               | 67,679         | Ord. Stk.                 | 17                       | 6         | 19         | Nil |
|                          | Great Western of Brazil       | 1,082          | 20.2.37            | 8,000                                 | —            | 1,00                       | 8            | 68,600                  | 79,600                | —               | 11,000         | Ord. Sh.                  | 1½                       | 2½        | 3½         | Nil |
|                          | International of Cl. Amer.    | 794            | Dec., 1936         | \$461,490                             | +            | \$2,875                    | 52           | \$5,112,141             | \$4,717,456           | +               | \$394,685      | "                         | —                        | —         | —          | —   |
|                          | Interoceanic of Mexico        | —              | —                  | —                                     | —            | —                          | —            | —                       | —                     | —               | —              | —                         | —                        | —         | —          | —   |
|                          | La Guaira & Caracas           | 22½            | Jan., 1937         | 6,270                                 | +            | 1,845                      | 5            | 6,270                   | 4,425                 | +               | 1,845          | 1st Pref.                 | 1½                       | —         | 1½         | Nil |
|                          | Leopoldina                    | 1,918          | 20.2.37            | 22,938                                | +            | 4,315                      | 8            | 160,133                 | 143,32                | +               | 16,781         | Ord. Stk.                 | 9                        | 3         | 7½         | Nil |
| Mexican                  | 483                           | 14.2.37        | \$282,800          | +                                     | \$29,500     | 7                          | \$1,874,100  | \$1,577,000             | +                     | \$297,100       | "              | 10½                       | 3½                       | 8         | Nil        |     |
| Midland of Uruguay       | 319                           | Jan., 1937     | 10,650             | +                                     | 1,100        | 31                         | 60,730       | 48,885                  | +                     | 11,865          | "              | 11½                       | 14                       | 1         | Nil        |     |
| Nitrate                  | 397                           | 15.2.37        | 8,755              | +                                     | 4,353        | 7                          | 20,830       | 23,461                  | —                     | 2,631           | Ord. Sh.       | 1½                        | 2½                       | 3½        | Nil        |     |
| Paraguay Central         | 274                           | 20.2.37        | \$2,641,000        | +                                     | \$1,236,000  | 34                         | \$89,925,000 | \$75,781,000            | +                     | \$14,144,000    | Pr. Li. Stk.   | 63½                       | 41½                      | 2½        | Nil        |     |
| Peruvian Corporation     | 1,059                         | Jan., 1937     | 79,801             | —                                     | 3,318        | 31                         | 570,580      | 537,416                 | +                     | 33,170          | Pref.          | 85                        | 71                       | 81        | 7          |     |
| Salvador                 | 100                           | 13.2.37        | \$43,750           | +                                     | \$8,750      | 33                         | \$642,508    | \$579,396               | +                     | \$63,112        | Pr. Li. Db.    | 15                        | 9                        | 14        | Nil        |     |
| San Paulo                | 153½                          | 14.2.37        | 26,500             | +                                     | 1,368        | 7                          | 191,953      | 195,752                 | —                     | 3,799           | Ord. Stk.      | 18                        | 16                       | 22½       | Nil        |     |
| Taitai                   | 164                           | Jan., 1937     | 3,590              | —                                     | 375          | 31                         | 24,490       | 23,915                  | +                     | 575             | Ord. Sh.       | 86                        | 46½                      | 94½       | 2½         |     |
| United of Havana         | 1,353                         | 20.2.37        | 52,812             | +                                     | 3,758        | 34                         | 669,277      | 634,593                 | +                     | 34,684          | Ord. Sh.       | 115½                      | 14½                      | 14        | 8          |     |
| Uruguay Northern         | 73                            | Jan., 1937     | 1,032              | —                                     | 138          | 31                         | 7,523        | 5,724                   | +                     | 1,805           | Deb. Stk.      | 31½                       | 1                        | 4½        | Nil        |     |
| Canada.                  | Canadian National             | 23,564         | 14.2.37            | 680,781                               | +            | 71,326                     | 7            | 4,164,272               | 3,758,983             | +               | 405,289        | —                         | —                        | —         | —          | —   |
|                          | Canadian Northern             | —              | —                  | —                                     | —            | —                          | —            | —                       | —                     | —               | —              | —                         | —                        | —         | —          | —   |
|                          | Grand Trunk                   | —              | —                  | —                                     | —            | —                          | —            | —                       | —                     | —               | —              | —                         | —                        | —         | —          | —   |
|                          | Canadian Pacific              | 17,223         | 14.2.37            | 457,400                               | +            | 20,600                     | 7            | 2,977,600               | 2,737,800             | +               | 239,800        | Perp. Dbs.<br>4 p.c. Gar. | 76<br>104½               | 51<br>99½ | 70½<br>96½ | 51½ |
| India.                   | Assam Bengal                  | 1,329          | 31.1.37            | 45,930                                | +            | 7,720                      | 43           | 1,111,652               | 1,051,894             | +               | 59,758         | Ord. Stk.                 | 163½                     | 101½      | 17         | Nil |
|                          | Barsi Light                   | 202            | 31.1.37            | 2,857                                 | —            | 1,733                      | 43           | 95,037                  | 119,565               | —               | 23,528         | Ord. Stk.                 | 87½                      | 82½       | 77½        | 3½  |
|                          | Bengal & North Western        | 2,107          | 31.1.37            | 87,757                                | —            | 9,346                      | 17           | 944,610                 | 903,212               | +               | 41,408         | Ord. Sh.                  | 77½                      | 65½       | 62½        | 8   |
|                          | Bengal Doonars & Extension    | 161            | 31.1.37            | 3,504                                 | —            | 445                        | 43           | 111,311                 | 118,729               | —               | 7,423          | Ord. Stk.                 | 319                      | 292½      | 315        | 51½ |
|                          | Bengal-Nagpur                 | 3,268          | 31.1.37            | 182,750                               | —            | 25,095                     | 43           | 4,941,582               | 5,345,171             | —               | 402,589        | "                         | 127½                     | 118       | 107½       | 59½ |
|                          | Bombay, Baroda & Cl. India    | 3,072          | 10.2.37            | 306,675                               | +            | 38,700                     | 44           | 7,509,795               | 7,037,025             | +               | 472,950        | "                         | 104                      | 100½      | 98½        | 4½  |
|                          | Madras & Southern Mahratta    | 3,229          | 31.1.37            | 179,100                               | +            | 1,662                      | 43           | 4,660,268               | 4,467,253             | +               | 193,015        | "                         | 114                      | 110½      | 111½       | 5½  |
|                          | Rohilkund & Kumaon            | 572            | 31.1.37            | 71,211                                | —            | 185                        | 17           | 179,621                 | 172,042               | +               | 7,587          | "                         | 116½                     | 108½      | 107½       | 7½  |
|                          | South India                   | 2,532          | 20.1.37            | 109,465                               | +            | 6,825                      | 41           | 3,232,376               | 3,175,033             | +               | 57,343         | "                         | 311                      | 286       | 312        | 5½  |
| Various                  | Belra-Umtali                  | 204            | Dec., 1936         | 68,774                                | +            | 5,507                      | 13           | 206,068                 | 193,193               | +               | 12,875         | —                         | —                        | —         | —          | —   |
|                          | Bilbao River & Cantabrian     | 15             | Jan., 1937         | 1,036                                 | —            | 282                        | 5            | 1,036                   | 1,318                 | —               | 282            | —                         | —                        | —         | —          | —   |
|                          | Egyptian Delta                | 620            | 10.2.37            | 7,477                                 | +            | 545                        | 44           | 221,820                 | 219,712               | +               | 2,108          | Prf. Sh.                  | 214                      | 15½       | 15½        | Nil |
|                          | Great Southern of Spain       | 104            | 29.8.36            | 568                                   | —            | 2,514                      | 35           | 33,629                  | 62,623                | —               | 28,994         | Inc. Deb.                 | 11½                      | 1½        | 3½         | Nil |
|                          | Kenya & Uganda                | 1,625          | Jan., 1937         | 289,136                               | +            | 55,760                     | 5            | 289,136                 | 233,376               | +               | 55,760         | "                         | —                        | —         | —          | —   |
|                          | Mashonaland                   | 913            | Dec., 1936         | 128,131                               | +            | 28,800                     | 13           | 373,680                 | 313,033               | +               | 60,647         | B. Deb.                   | 50½                      | 37        | 46         | 7½  |
|                          | Midland of W. Australia       | 277            | Dec., 1936         | 14,803                                | —            | 39                         | 26           | 82,053                  | 83,623                | +               | 1,570          | 1 Mt. Db.                 | 101½                     | 101½      | 107        | 41½ |
|                          | Nigerian                      | 1,905          | 2.1.37             | 72,630                                | —            | 29,245                     | 40           | 1,734,265               | 1,355,558             | +               | 378,707        | Inc. Deb.                 | 97                       | 93½       | 96         | 4½  |
|                          | Rhodesia                      | 1,538          | Dec., 1936         | 221,307                               | +            | 35,843                     | 13           | 664,648                 | 575,985               | +               | 88,663         | 4 p.c. Db.                | 107                      | 103½      | 109        | 31½ |
|                          | South Africa                  | 13,263         | 30.1.37            | 613,926                               | —            | 19,051                     | 44           | 26,805,521              | 24,913,979            | +               | 1,891,542      | —                         | —                        | —         | —          | —   |
|                          | Victoria                      | 4,728          | Oct., 1936         | 883,923                               | —            | 13,486                     | 17           | 3,126,552               | 3,136,262             | —               | 9,710          | —                         | —                        | —         | —          | —   |
|                          | Zafra & Huelva                | 112            | Dec., 1936         | 16,027                                | +            | 5,302                      | 52           | 113,343                 | 134,754               | —               | 21,411         | —                         | —                        | —         | —          | —   |

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1%.

† Receipts are calculated @ 1s. 6d. to the rupee. ‡ Ex dividend. Salvador and Paraguay Central receipts are in currency.

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being overestimated. The statements from July 1 onwards are based on the current rates of exchange and not on the par value.